DEPARTMENT OF THE ARMY



SENECA ARMY DEPOT ACTIVITY 5786 STATE RTE 96, P.O. BOX 9 ROMULUS, NEW YORK 14541-0009



February 13, 2004

Engineering and Environmental Division

Mr. Charles McCann
LEPC Coordinator
Emergency Management Office
1 DiPronio Drive
Waterloo, NY 13165

Enclosed is Seneca Army Depot Activity's SARA Tier II submission of 2003.

If there are any additional questions, please contact Mr. Thomas Grasek at (607) 869-1532.

Enclosure

STEPHEN M. ABSOLOM Installation Manager

CF: NYSDEC Romulus Fire Department Ovid Fire Department

Signature

dikes and other salequard measures

Name and official title of owner/operator OR owner/operator's authorized representative



SENECA COUNTY EMERGENCY MANAGEMENT OFFICE FIRE COORDINATOR/STOP-DWI



CHARLES F. McCANN, Director / Coordinator One DiPronio Drive Waterloo, NY 13165 cmccann@co.seneca.ny.us 315.539.1756 (Phone) 315.539.9150 (Fax)

February 2, 2004

Dear Facility Coordinator:

The regulations as established under SARA Title III requires that annual Tier I or Tier II Chemical Inventory Forms be filed annually by March 1st with the Local Emergency Planning Committee (LEPC), your local fire department and New York State - Department of Environmental Conservation, Albany office.

The Seneca County LEPC requires that only Tier II forms are filed and that your fire district are listed on the front of the form. A Tier II form is enclosed for your use. Please photocopy, if additional forms are required or contact Mr. Charles F. McCann, Seneca County Emergency Management Director, at 315-539-1757.

If you claim the chemical to be a trade secret or its storage location to be confidential, please contact this office for additional forms and guidance.

The fire department has requested that all chemicals be listed in alphabetical order on the Tier II forms to facilitate their filing and identification procedures.

It is requested that a site plan of the facility, showing the storage area of the chemicals, be included with the Tier II form.

If you would like to file this form electronically, you may send the form to: cmccann@co.seneca.ny.us

The mailing address for the LEPC:

Mr. Charles F. McCann LEPC Coordinator Emergency Management Office One DiPronio Drive Waterloo, NY 13165

The mailing address for the NYS Department of Environmental Conservation:

NYS DEC Bureau of Spill Prevention and Release 50 Wolf Road, Room 326 Albany, NY 12233

If you have any questions or need any assistance, please feel free to call me.

Sincerely,

Charles F. McCann

Tier Two EMERGENCY Facility Identification Street Street				Phone()	
AND HAZARDOUS CHEMICAL INVENTORY Specific Information by Chemical City County Dun & B Num FOR DFFICIAL	State — Zip — ad — — — — — — — — — — — — — — — — —		ontact	24 Hr. Phone ()	
USE Date Received Important: Read all instructions before completing	g form Reporting Period	Phone(From January 1 to December :	31, 19	24 Hr. Phone () Check if information below is identical to the information submitted last year.	
Chemical Description	Physical and Health Hazards	Inventory	Container Type Temperature Pressure	orage Codes and Locations (Non-Confidential) Storage Locations	Optional
Chem. Name Check all	Fire Sudden Release of Pressure Reactivity Immediate (acute) Delayed (chronic)	Max. Daily Amount (code) Avg. Daily Amount (code) No. of Days On-elte (days)			
Chem. Name Check all Uhat apply: Pure Mix Solid Liquid Gas EHS EHS Name	Fire Sudden Release of Pressure Reactivity Immediate (acute) Delayed (chronic)	Max, Dally Amount (code) Avg. Dally Amount (code) No, of Days On-eite (days)			
Chem. Name Check all	Fire Sudden Release of Pressure Reactivity Immediate (acute) Delayed (chronic)	Max, Dally Amount (code) Avg. Dally Amount (code) No. of Days On-site (days)			

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through ______, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner/operator OR owner/operator's authorized representative

Signature

Date signed

I have attached a site plan

I have attached a list of site coordinate abbreviations

I have attached a description of dikes and other saleguard measures

DOD Hazardous Materials Information System DOD 6050.5-LR

AS OF July 1995

Proprietary Version - For U.S. Government Use Only

FSC: 6810

NIIN: 002229643

Manufacturer's CAGE: 1CX92

Part No. Indicator: A

Part Number/Trade Name: O-A-451F

General Information

Item Name: AMMONIUM HYDROXIDE

Company's Name: MAIN POOL & CHEMICAL SUPPL

Company's Street: 501 MAI N STREET

Company's P. O. Box: Company's City: AVOCA Company's State: PA Company's Country: US

Company's Zip Code: 18641-1422

Company's Emerg Ph #: Company's Info Ph #: Distributor/Vendor # 1: Distributor/Vendor # 1 Cage: Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage: Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage: Distributor/Vendor # 4: Distributor/Vendor # 4 Cage: Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 003 Tot Safety Entries This Stk#: 013

Status:

Date MSDS Prepared: 01JAN87 Safety Data Review Date: 270CT86

Supply Item Manager: MSDS Preparer's Name: Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City: Preparer's State: Preparer's Zip Code: Other MSDS Number:

MSDS Serial Number: BDKCG Specification Number: O-A-451F

Spec Type, Grade, Class:

Hazard Characteristic Code: C2

Unit Of Issue:

Unit Of Issue Container Qty:

Type Of Container: Net Unit Weight:

```
Report for NIIN: 002229643
NRC/State License Number:
Net Explosive Weight:
Net Propellant Weight-Ammo:
Coast Guard Ammunition Code:
______
                Ingredients/Identity Information
______
Proprietary: NO
Ingredient: AMMONIUM HYDROXIDE (SARA III)
Ingredient Sequence Number: 01
Percent: 59.3
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: BQ9625000
CAS Number: 1336-21-6
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit:
______
               Physical/Chemical Characteristics
_______
Appearance And Odor: COLORLESS, CLEAR LIQ. - VERY PUNGEN, CHOKING.
Boiling Point: 82.4F/28C
Melting Point:
Vapor Pressure (MM Hg/70 F): 646
Vapor Density (Air=1): 0.6
Specific Gravity: 0.9
Decomposition Temperature:
Evaporation Rate And Ref: >1
Solubility In Water: COMPLETE
Percent Volatiles By Volume:
Viscosity:
pH:
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss): N/P
Corrosion Rate (IPY):
Autoignition Temperature: 1204F
______
                 Fire and Explosion Hazard Data
______
Flash Point: NONE
Flash Point Method: N/P
Lower Explosive Limit: 16.
Upper Explosive Limit: 25.
Extinguishing Media: EXTINGUISH WITH AGENT SUITABLE FOR SURROUNDING FIRE
Special Fire Fighting Proc: WTR SPRAY TO COOL CONTNRS/STAY UPWIND OF
FIRE/PROTECT.CLOTH.
Unusual Fire And Expl Hazrds: RELEASES FLAMMABLE AMMONIA GAS AT ALL TEMPS.
, WHICH CAN BE EXPLOSIVE UNDER SOME CONDITIONS.
```

Report for NIIN: 002229643

Reactivity Data

Stability: NO

Cond To Avoid (Stability): UNSTABLE W/HEAT.-RELEASES AMMONIA GAS. Materials To Avoid: STRNG OXID., CA, HYPOCHL.BLEACHS, HALOGNS, GOLD.-SEE SUPPLEMENT.

Hazardous Decomp Products: MAY RELEASE AMMONIA GAS.

Hazardous Poly Occur: NO Conditions To Avoid (Poly):

Health Hazard Data

LD50-LC50 Mixture:

Route Of Entry - Inhalation: N/P

Route Of Entry - Skin: N/P

Route Of Entry - Ingestion: N/P

Health Haz Acute And Chronic:

Carcinogenicity - NTP: N/P

Carcinogenicity - IARC: N/P

Carcinogenicity - OSHA: N/P

Explanation Carcinogenicity:

Signs/Symptoms Of Overexp: SEVERE EYE/SKIN BURN.-CONTACT W/EYE MAY CAUSE PERMANENT INJURY.-VAPOR IS EXTREMELY IRRITATING.

Med Cond Aggravated By Exp:

Emergency/First Aid Proc: INHAL:RMV TO FRESH AIR. IF NOT BRTHNG GIVE CPR; IF BRTHNG DIFF GIVE OXYGEN. EYE:IMMED FLUSH W/PLENTY OF WATER. SKIN: WASH W/SOAP & WATER. RMV CONTAM CLTHG & SHOES. INGEST:DO NOT INDUCE VOMIT. NOTHG BY MOUTH IF UNCONSC. GET MEDICAL ATTN.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: KEEP UPWIND OF LEAK.-EVACUATE AREA.-FLUSH AREA WITH WATER SPRAY.-AFTER DILUTION, WATER MAY BE NEUTRALIZED W/DILUTE

HCL.

Neutralizing Agent:

Waste Disposal Method: IF APPVD, DILUTE SOLUTIONS MAY BE WASHED TO WASTEWATER TREATMENT SYSTEM.-COMPLY W/LOCAL, STATE & FEDERAL REGULATIONS. Precautions-Handling/Storing: STR.IN WELL VENTILATED AREA.-KEEP CNTNRS TIGHTLY CLSD.-KEEP AWAY FROM HEAT, SPARKS AND FLAME.

Other Precautions: BEFORE USING, READ DUPONT REAGENTS DATA SHEET.-FOR MORE INFO.REFER TO NIOSH GUIDE TO RESPIRATORY PROTECTN: PUBLIC.76-189 AND NIOSH/OSHA POCKET GUIDE TO CHEM.HAZARDS.

Control Measures

Respiratory Protection: CHEM.CARTR.RESP.W/AMM.CARTER.OR SCBA.-HI CONC. SEE OTHER PRECAUTIONS

Ventilation: USE ONLY W/VENTILATION ADEQ. TO MAINTAIN EXPOSURE LIMITS.

Protective Gloves: RUBBER/PLASTIC

Eye Protection: CHEM SPLASH GOGGLES

Other Protective Equipment: APRON & SHOES/LONG SLEEVE SHIRT/WOOL OR ORLON TROUSERS.

Report for NIIN: 002229643 Work Hygienic Practices: Suppl. Safety & Health Data: ALT.PHONE # (800)424-9300.-EXPL.LIMITS ARE FOR DRY AMMONIA GAS.-TLV IS FOR AMMONIA GAS.-INCOMPAT: MERCURY, SILVER AND THEIR SALTS, DIMETHYLSULFATE. - MSDS DATED MAY 80. ______ Transportation Data ______ Transportation Action Code: Transportation Focal Point: D Trans Data Review Date: 86300 DOT PSN Code: ANE DOT Symbol: DOT Proper Shipping Name: AMMONIA SOLUTIONS DOT Class: 2.2 DOT ID Number: UN2073 DOT Pack Group: DOT Label: NONFLAMMABLE GAS DOT/DoD Exemption Number: IMO PSN Code: AWT IMO Proper Shipping Name: AMMONIA, ANHYDROUS, LIQUEFIED OR AMMONIA SOLUTIONS IMO Regulations Page Number: 2104 IMO UN Number: 1005 IMO UN Class: 2(2.3) IMO Subsidiary Risk Label: -IATA PSN Code: BJY IATA UN ID Number: 1005 IATA Proper Shipping Name: AMMONIA SOLUTIONS, IATA UN Class: 2.3 IATA Subsidiary Risk Class: 8 IATA Label: TOXIC GAS & CORROSIVE AFI PSN Code: BJY AFI Symbols: 0 AFI Prop. Shipping Name: AMMONIA, ANHYDROUS, LIQUEFIED OR AMMONIA SOLUTIONS AFI Class: 2.3 AFI ID Number: UN1005 AFI Pack Group: AFI Label: POISON GAS , CORROSIVE AFI Special Prov: 4 AFI Basic Pac Ref: 6-6,6-8 MMAC Code: N.O.S. Shipping Name: Additional Trans Data: ____________ Disposal Data ______ Disposal Data Action Code:

Disposal Data Action Code:
Disposal Data Focal Point: E
Disposal Data Review Date: 88231
Rec # For This Disp Entry: 01
Tot Disp Entries Per NSN: 008
Landfill Ban Item: YES

Disposal Supplemental Data: ALT.PHONE # (800)424-9300.-EXPL.LIMITS ARE FOR

Report for NIIN: 002229643

DRY AMMONIA GAS.-TLV IS FOR AMMONIA GAS.-INCOMPAT: MERCURY, SILVER AND THEIR SALTS, DIMETHYLSULFATE. -MSDS DATED MAY 80. IN CASE OF ACCIDENTAL EXPOSURE OR DISCHARGE, CONSULT HEALTH AND SAFETY FILE FOR PRECAUTIONS. 1st EPA Haz Wst Code New: D002 1st EPA Haz Wst Name New: CORROSIVE 1st EPA Haz Wst Char New: CORROSIVITY 1st EPA Acute Hazard New: NO 2nd EPA Haz Wst Code New: 2nd EPA Haz Wst Name New: 2nd EPA Haz Wst Char New: 2nd EPA Acute Hazard New: 3rd EPA Haz Wst Code New: 3rd EPA Haz Wst Name New: 3rd EPA Haz Wst Char New: 3rd EPA Acute Hazard New:

______ Label Data

Label Required: YES Technical Review Date: Label Date: MFR Label Number:

Label Status: F Common Name:

Chronic Hazard: N/P

Signal Word:

Acute Health Hazard-None: Acute Health Hazard-Slight:

Acute Health Hazard-Moderate:

Acute Health Hazard-Severe:

Contact Hazard-None:

Contact Hazard-Slight: Contact Hazard-Moderate:

Contact Hazard-Severe:

Fire Hazard-None:

Fire Hazard-Slight:

Fire Hazard-Moderate:

Fire Hazard-Severe:

Reactivity Hazard-None:

Reactivity Hazard-Slight:

Reactivity Hazard-Moderate:

Reactivity Hazard-Severe:

Special Hazard Precautions: POISONOUS; MAY BE FATAL IF INHALED OR ABSORBED THROUGH SKIN. CONTACT MAY CAUSE BURNS TO SKIN AND EYES. CONTACT WITH LIQUID MAY CAUSE FROSTBITE. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION.

Protect Eye: Protect Skin:

Protect Respiratory:

Label Name: MAIN POOL AND CHEMICAL SUPPLY CO

Label Street: 501 MAI N STREET

Label P.O. Box: Label City: AVOCA Report for NIIN: 002229643

Label State: PA

Label Zip Code: 18641-1422
Label Country: US
Label Emergency Number:
Year Procured:

SENECA ARMY DEPOT

HAZARDOUS WASTE MINIMIZATION PLAN

(SEAD HAZMIN PLAN)

FEBRUARY 1993

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1. PURPOSE:

The purpose of the SEAD HAZMIN Plan is to provide a specific plan of action to reduce the quantity and toxicity of hazardous wastes (HW) generated at Seneca. The SEAD HAZMIN Plan is designed to satisfy the Federal (EPA) or New York State (NYS) equivalent requirements for HAZMIN according to the Resource, Conservation and Recovery Act (RCRA) as well as the requirements of the AMC HAZMIN Plan.

The actions to reduce the quantity and toxicity of HW generated at Seneca, and the attainment of the reduction goals in this plan, must be generator responsibility IAW SEAD Regulation SEAD-R 420-2, HW Management.

2. SCOPE:

This plan covers all HW regulated under RCRA and NYS hazardous waste laws which is generated at Seneca. This plan covers the use of Hazardous Materials (HM), or processes which use HM which may produce a HW.

3. BACKGROUND:

Seneca Army Depot provides for the receipt, storage, issue, maintenance, demilitarization, and disposition of special weapons, conventional ammunition, and other commodities. Seneca also provides for in-house and on-site test condition assessment/determination and upgrading (repair, rehabilitation, and manufacture) or DOD owned Industrial Plant Equipment (IPE), depot maintenance plant equipment, and associated tooling and special test equipment.

These activities generate various HW's at Seneca which involve paints and lacquer, thinners, paint filters, spent battery acid, sludges, PCB contaminated oils, solvents, and solids, stoddard solvent, miscellaneous recoverable and non-recoverable solvents, and demilitarization wastes.

The hazardous characteristics of each HW generated at Seneca is explicitly determined by source segregation and analytical testing, IAW SEAD-R 420-2, HW Management. Seneca's HW types are summarized in Table I, Characteristics of Wastes Generated by SEAD.

Efforts undertaken to reduce the volume and toxicity of the waste generated involve the following:

- a. A paint disposal policy is in place, which sets procedures for the proper disposition of paints and aerosols. It includes resale of usable materials, and drying containers of unusable materials before disposal.
- b. A steel lined open burning trough, which eliminates the potential mixing of residues with soil, has been constructed.
- c. The use of a solvent recycling service was expanded to include all waste solvent generating processes and it has eliminated the disposal of waste solvents.

- d. A machine cleaning facility, which will replace disposal of 10,000 gals/year of wastewater and will recycle industrial cleaning solvents, is under design and is included as part of the Closure of a Hazardous Waste Tank.
- e. Seneca Army Depot developed a detailed hazardous waste minimization plan and is in the process of implementing it. One aspect of this is the minimization of the disposal of excess, off-specification, and expired shelf-life (EOE) hazardous materials as hazardous wastes through management procedures.
- f. The use of newer vehicles, which require less battery maintenance, has decreased the generation of waste battery acids. A wet battery exchange program has been developed to further reduce acid disposal.
- g. The disposal of rags contaminated with non-chlorinated solvent, grease, oils, etc., was eliminated by using an off-post laundry service.
- h. Treatment processes, such as aeration of wastewater and oil/water separators, have been used (and are being explored).
- i. Alternate disposal, i.e., management as industrial waste is being explored.
- j. Overpacking flammable solids in water to minimize combustion dangers was replaced by overpacking in absorbent.

4. GOALS:

The SEAD HAZMIN goals will be the AMC HAZMIN goals, as indicated in the AMC HAZMIN Plan.

- a. Baseline Minimization, IAW the AMC HAZMIN Plan.
- b. The elimination of the disposal of used solvents IAW the Used Solvent Elimination (USE) Program, by 1 Oct 86.
- c. The elimination of excess HM, off-specification HM, expired shelf-life HM, and HM spill residue (including petroleum products) through Hazardous Material Control (as outlined in Section 7, HAZMIN ACTIONS) as an annual ongoing program.
- d. Accomplish all HAZMIN goals through implementation of management programs, standard procedures, training and HAZMIN projects. The funding goals of HAZMIN projects will be 90% low cost and 10% medium cost (0 & M funds).
 - e. Annual goals for all waste streams are as follows:

ANNUAL HAZMIN GOALS

HAZMIN GOALS (%)***
WASTE GENERATED

HW TYPE					WASTE	GENERA	TED	
		CY:	86/87	88	89	90	. 9	1 92
D001	Painting, cleaning/degreasing - ignitable solids							00 -
D001	Misc ignitable liquids		2	3.2	5	5	9	8
D001	Degreasing - waste solvent		2	3	4	5	9	8
D008	Steam Cleaning		2	3	4	5	9	8
D002	Corrosives - Battery Maintenance		2	3	4	5	9	8
F002	- Chlorinated Solvents/So		2.5	3	4	5	9	10
Varies	Excess, off-spec Expired of the		2	3	4	5	10.5	. 8
D001	unsaleable hazardous materials Spill Residues	,	N/A	N/A	N/A	N/A	N/A	N/A
D003			N/A	N/A	N/A	N/A	N/A	N/A
D003	Open Burning/Open Detonation *		N/A	N/A	N/A	N/A	N/A	N/A
D001	Deactivation Furnace **		N/A	N/A	N/A	N/A	N/A	N/A
	Solvent Recycled Off-Site		N/A	N/A	N/A	N/A	N/A	N/A
	Overall Annual Goals	12	2.5	20	25	30	37.5	50

^{*} Disposed on-site

^{**} Incinerated on-site

^{***} Percentages are cumulative

5. PROGRAM MANAGEMENT:

- a. General: The SEAD HAZMIN Program will be managed IAW AR 420-47, Solid and Hazardous Waste Management, the AMC HAZMIN Plan, and SEAD-R 420-2, HW Management. SEAD-R 420-2, has historically, and will continue to serve as SEAD's HW Management Plan. SEAD-R 420-2 is updated to comply with regulatory and HW Management changes.
- b. SEAD HW Management Board: The membership of the SEAD HW Management Board is as follows:
 - Advisory CEA/CO
 - Chairman Director of Engineering & Housing
 - Executive Secretary Installation Environmental Coordinator
 - Safety Officer
 - Quality Assurance
 - Generating Director or Representative (Division Chief level or higher)
 - Chief of Depot Equipment
 - Industrial Hygienist

The actions of the SEAD HAZMIN Board are discussed under Section 6, HAZMIN ACTIONS.

c. HW Generating Activities:

Activity	Directorate
Machine Degreasing	D/EH, D/LOG, D/SUP
Battery Maintenance	D/LOG
Painting	D/EH, D/AO, D/SUP, D/SW, D/LOG
Steam Cleaning	D/LOG, D/SUP
PCB Decontamination	D/SUP
Demilitarization	D/AO
Other Degreasing/Cleaning	D/SW, D/SUP
Transformer Maintenance	D/EH
HM Storage/Issue	D/SUP
POL Storage/Issue	D/SUP

d. Responsibilities: As defined in para 4(f)(2) of SEAD-R 420-2, HW Management, "Generators and/or responsible supervisors will make every attempt to decrease or eliminate the HW's they produce through recycling, reclaiming, reuse, or through alternate processes".

This plan and the actions taken IAW it will serve as a proactive implementation to achieve Seneca's and the AMC's HAZMIN goals.

6. TRAINING:

Personnel training responsibilities are outlined in SEAD-R 420-2, HW Management.

The following excerpt, entitled Section H, Personnel Training, summarizes Seneca's HW Training Program.

SECTION H

H-1

PERSONNEL TRAINING

H-1 Outline of Training Program

The information contained in this section outlines the personnel training program at SEAD pertaining to its hazardous waste storage facilities covered under this permit application. It is submitted in accordance with 40 CFR 270.14(b)(12) and 264.16 and 6NYCRR 373-2.2(h).

H-la Job Titles and Description

Table H-1 depicts the current organization of personnel involved in hazardous waste activities. Employees directly involved with the handling of hazardous waste include the managers at satellite accumulation areas. Management involving compliance with RCRA regulations is the responsibility of the environmental engineers in the Facilities Engineering Division. The duties, responsibilities, and qualifications of the Chief Officer in charge of the program are shown below.

Position Responsibilities and Duties:

- Emergency Coordinator for all hazardous waste activities.
- Serves as Hazardous Waste Training Coordinator by overseeing the training of employees and providing training.
- Responsible for all air, water, and waste control systems of the facility.
- Obtains all required permits and licenses or modifications of same from local, state, and federal regulatory bodies.
- Resolves problems involving permits and licenses from local, state and federal regulatory agencies.
- Notifies proper authorities in emergency situations.

Typical Experience and Qualifications:

- B.S. degree in Chemical, Civil, or Environmental Engineering.
- Three to five years experience in industrial or municipal pollution control management.
- Training in hazardous waste management is required.

5

The duties and responsibilities of the Directorate Coordinator, as they pertain to hazardous waste management, are listed below:

Position Responsibilities and Duties:

- Oversee waste management in larger shops.
- Report to facility engineer on questions concerning hazardous waste storage or generation.
- Receive reports on hazardous waste management from individual shop supervisors.

Typical experience and qualifications:

- Training in hazardous waste management.

The duties and responsibilities of the shop supervisors, as they pertain to hazardous waste management, are listed below:

Position Responsibilities and Duties:

- Monitor accumulation sites for cleanliness, proper labelling, safety equipment, and proper placement of wastes in containers.
- Retain responsibility for container contents until wastes are accepted by the Facility Engineer at Building 307.
- In large shops, report to Directorate Coordinator. In smaller shops, report directly to Facility Engineer.

Typical Experience and Qualifications:

- Training in hazardous waste management.

The duties and responsibilities of the employees handling hazardous wastes are listed below.

Position Responsibilities and Duties:

- Proper placement of waste in containers at accumulation areas.
- Maintenance of cleanliness at accumulation areas.
- Report any spills or mishaps.
- Record wastes generated.

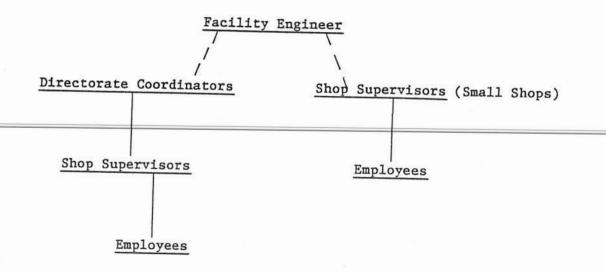
Typical Experience and Qualifications:

- Training in hazardous waste management.

In addition to the positions described above, individuals in the Quality Assurance and Ammunition Division, who either perform or monitor waste shipment loading, are trained in the safe handling of hazardous and dangerous materials.

TABLE H-1

ORGANIZATION CHART FOR HAZARDOUS WASTE MANAGEMENT



H-1b Training Program Content, Frequency and Technique.

All personnel that are members of the emergency response team or manage a satellite accumulation area are part of a regular and formal hazardous waste training program. This program follows the <u>Program if Instruction for Defense Hazardous Materials Handling Course</u> (U.S. Army, 19822). An outline of this course is given on Table H-2. In addition, these employees are provided with copies of the following:

- Hazardous Waste Compatibility Chart
- List of Chemical Substances
- Method of Determining Compatibility of Hazardous Waste
- Indicators of Hazardous Materials Shipment Violations
- Hazardous Waste Management Problems and Considerations

During the training program, employees are instructed on (1) the purpose of RCRA and importance of maintaining compliance with those regulations, (2) the hazardous nature of chemical wastes stored or treated within the facility, (3) proper handling and storage procedures for these wastes, and (4) emergency procedures and contingency plans. The course is used as a framework for training SEAD personnel in the proper procedures, equipment and systems to be used in managing hazardous wastes. In addition, key hazardous waste management facility personnel will periodically attend off-post training courses or seminars.

In addition to these formal training sessions, on-the-job training takes place on a continuous basis.

H-1c Emergency Response Training.

This training program is designed to ensure that personnel not only handle hazardous wastes in a safe manner but also properly respond to emergency situations. The program trains hazardous waste handling/management personnel to maintain compliance under both normal operating conditions and emergency situations. The installation response team has "dry" exercises at unannounced times twice each year.

Training elements addressing unusual or emergency situations include:

- Procedures for locating, using, inspecting, repairing, and replacing facility emergency and monitoring equipment.
- Emergency communication procedures and alarm systems.
- Response to fires or explosions.
- Response to contamination incidents.
- Shutdown of operations and power failure procedures.
- Procedures for evacuation.

In addition to hazardous waste management personnel, the Post Fire Department is on standby for response to all fires and spill emergencies.

Managers in satellite accumulation areas are given the same training as emergency response personnel.

H-ld Training Coordinators.

The current training coordinator for SEAD is Randall Battaglia. Since he began employment at SEAD, he has received training in hazardous waste management through attendance in numerous government and private training sessions. he is also intimately familiar with the waste management procedures at SEAD, as he is the individual responsible for managing all aspects of the program. He frequently contributes to training sessions conducted on post by either private or government agencies.

Assisting Mr. Battaglia in implementing the hazardous waste training program are the various Directorate Coordinators and Shop Supervisors. These individuals have received training, and are responsible for overseeing the on-the-job training in their shops. Additionally, they may also contribute to training courses conducted by outside personnel.

H-2 Implementation of Training Program

All personnel currently involved in hazardous waste activities have either been fully trained at the time of this submittal or are under the direct supervision of a fully trained staff member. In the future, all new personnel will complete this training program within 6 months of assignment to any of the hazardous waste treatment/storage facilities or within 6 months of their date of employment, whichever is later. No employee hired to work at this facility will work unsupervised prior to completion of the training program.

Employees are required to meet at least annually for review and update of this training program and to discuss the following subject:

- All hazardous wastes currently being handled at the facility, noting any changes in waste type, volume, source, characteristics, or location that have occurred during the past year.
- The status of storage and operating conditions and procedures, noting any areas where there are problems or potential for problems. Employees participate in developing effective solutions.
- The requirements contained in the facility's RCRA permit, noting any changes that have occurred during the past year. Areas where maintenance of compliance is a problem are identified and discussed, and effective solutions are sought.
- Incidents that have occurred in the past year that warranted use of contingency plans and/or emergency action. This review focuses on the cause of the incident and identification of steps to prevent or to ensure better handling of such events in the future.

Records documenting the job title for each position, job descriptions, names of employees, and completed training programs (both introductory and review) are maintained in the personnel office of SEAD. These reports are kept for at least three years form the date of an individual employee's last working day unless these records accompany the individual when he is transferred within the Army. Records for current employees will be maintained until facility closure.

All emergency response personnel requiring protective equipment are formally trained. All personnel on Seneca Army Depot who handle Hazardous Materials are trained for hazard recognition under the OSHA Hazard Communications Rule.

Hazardous Waste is always managed, including handling, under the supervision of personnel who attend annual update training, as described above. Although the regulations (6NYCRR Part 373-2.2(h))) do not explicitly state that employees who actually handle hazardous wastes receive training, Seneca trains these personnel in the above course. These personnel do not always receive annual update training in a formal classroom situation. Seneca formally trained about 90 personnel in three course in 1987. Personnel handling Hazardous Wastes receive informal "on-the-job" training.

TABLE H-2

OUTLINE OF HAZARDOUS WASTE TRAINING MANUAL

A. COURSE:

Defense Hazardous Materials Handling Course

B. PURPOSE:

To provide a basic understanding of the hazards and techniques associated with the handling of hazardous Materials so that students will be better able to protect their personal health, prevent damage to the environment and comply with applicable laws, regulations and policies.

C. OBJECTIVES:

At the completion of the course, the student should be able to:

- 1. Recognize, identify and classify hazardous materials.
- 2. Take actions necessary to prevent hazardous chemical incidents, protect personal health, and prevent damage to the environment.
- 3. Within the requirements of his job, properly package, label, store, handle, and transport hazardous materials and waste.
- 4. Take immediate and effective action in response to hazardous material spills or other emergencies.
- 5. Properly manage the resources under his control to prevent violations of applicable laws, regulations and policies.
- D. PREREQUISITES:

Nominees should be military or civilian personnel who identify, package, store, handle, transport or manage hazardous materials or waste.

E. METHODS OF

INSPECTION:

Instructional methods include lecture-conferences, seminars, films, guest speakers, and practical exercises.

F. SCOPE:

The curriculum includes identification and classification of hazardous materials; health hazards and personal safety; packaging, labeling, storing, handling, and transportation procedures; release response; and hazardous materials and waste laws, regulations, and policies.

Source: U.S. Army, 1982

WASTE	POTENTIAL HAZARD	TYPICAL COMPOSITION	DRUMS/YR
1. Machine Cleaning Wastes			
- Paper filters from paint spray booths (D001)	Ignitable Toxic	Ignitability, Pb, Cr, Cd	10
- Methylene Chloride and stripped paint, absor- bent, dirt, etc. (F002)	Ignitable Toxic	Methylene Chloride FP = 22 degrees C Pb, Cr, Cd	15
- Spent stoddard solvent (D001)	Ignitable	Stoddard solvent (Aliphatic hydrocarbon) contaminated with grease, dirt	10
- Still bottoms from recovery of 1,1,1-trichlo-roethane solvent (FOO1)	Ignitable Toxic	Halogenated hydocarbon solvent; sludge, dirt, grease	10
- Sludge from oil/grease separators on drains from engine cleaning operations (D008)	Toxic	Oil/grease, Pb, Cr, Cd	10
- Mixed recoverable solvents (D001)	Ignitable, Toxic	Non-halogenates solvents, water, grease, dirt	10
- Mixed non-recoverable solvents (D001)	Ignitable, Toxic		5
- Cloth rags contami- nated with solvents, clay absorbents (F001, F003, F005, D001)	Ignitable	Halogenated, non-halogenated solvents, cloth, dirt, grease	100
- Still bottoms from 1,1,1-trichloroethane vapor degreasers (F001)	Toxic	Halogenated solvent, dirt, grease, Pb, Cr, Cd	10
- Steam Cleaning Waste- water (D008)	Toxic	Traces of solvent paint chips lead, oil/grease, dirt, water detergent	•

^{*}plus 10,000gal/yr bulk

SENECA ARMY DEPOT

PLAN OF ACTION

TOWARD ZERO GENERATION OF

HAZARDOUS WASTE

1. PURPOSE:

The purpose of this plan is to implement a plan of action toward an ultimate goal of zero generation of hazardous waste for Seneca Army Depot.

2. OBJECTIVE:

The objective of this plan is to define a conception-to-grave hazardous materials management scenario for Seneca Army Depot's zero generation goal.

3. SCOPE:

This plan will outline the means to achieve conception-to-grave HAZMIN actions for Seneca Army Depot.

4. HAZMIN ACTIONS:

Seneca will pursue zero generation of hazardous wastes by the following means:

a. Hazardous Materials Management (HMM) -

Seneca Army Depot's 1983 hazardous waste (HW) regulation states that supervisors that are responsible for operations which generate HW's are responsible for managing those HW's. This regulation also stipulates that prior to purchase and use of hazardous materials (HMs), supervisors must request a HW determination from the environmental office. This results in a system in place where HAZMIN occurs in the planning stages of operations, equipment purchases, HM use, etc. Past HAZMIN that has involved this includes used solvent elimination, solvent recycling activities, using less hazardous solvent in vapor degreasing, use of biodegradable degreasers, reuse of HMs, etc.

Future initiatives under HMM toward the zero generation goal involve the following:

(1) Hazardous Materials Management will eliminate the disposal of excess, off-specification and expired shelf-life (EOE) HMs. Frequently, more HMs are ordered in the procurement system than are actually needed by the users; this results in HW due to EOE reasons. Management procedures of ordering only what is needed and using only what is needed, will guide Seneca Army Depot toward zero generation.

- (2) On a case-by-case basis, many EOE HMs are readily saleable items by DRMO, while other EOE HMs are always disposed as HW. Standing Operating Procedures for use, purchase and storage of HMs that may result in EOE HMs can be written by the users of "Normally-disposed" EOE HMs.
- (3) Alternative processes and materials must always be considered for new requirements.

b. Generator Responsibilities -

The formal responsibility of mission activities, tenant activities, and subsequent supervisors to manage and minimize HWs is a key component of achieving HAZMIN and attaining zero generation. The direct, clear, legal liabilities of HW management give organizations and supervisors incentive to minimize or eliminate their wastes; this has resulted in some of the material/service substitutions described below.

The future directions for this component of the zero generation plan is to ensure that the generators assume zero goals and increase efforts to achieve these. A tracking/accountability/reporting system will be implemented to track generator's progress.

c. Materials/Services Substitution -

One major waste stream at Seneca Army Depot was eliminated as a result of generator HAZMIN actions. Industrial equipment operations at Seneca Army Depot require many degreasing operations. This generated stoddard solvent, grease, dirt, and oil contaminated rags. The generating activity requested a hazardous waste determination/approval to use an off-post laundry service to supply cloth rags/wipes, collect after use, launder, and return. Since the solvent contains non-chlorinated aliphatic and aromatic organics which are chemically similar to the greases and oils, and was hazardous for ignitability only, the state regulators agreed that the laundry service was an acceptable management alternative (no tracking is required).

Future direction and use of this idea will involve swipes used for special degreasing needs. Currently, toluene, acetone, trichloroethylene, and freon swipes are used for special requirements. If approvals can be obtained through the mission activity, the same type of service (only through an off-post dry cleaning service) could eliminate these waste streams also.

Biodegradable degreasers are used at Seneca Army Depot; however, since all waste oils contain heavy metals, EP Toxicity tests have shown that these wastes are hazardous due to heavy metal content. For this reason, biodegradable degreasers are normally less hazardous, however, they alone will not achieve zero generation.

Biodegradables are useful in conjunction with an end-of-pipe separation process. Seneca is purchasing oil/water separators to minimize cutting/grinding coolant oils; these will be useful for steam cleaning wastes, and may be combined with biodegradables. End-of-pipe separation technology exists to achieve separating hazardous bilayered wastewater (for discharge to sanitary sewer) and non-hazardous solid wastes.

HAZMIN ACTION - GENERAL, Cont'd

ZERO GENERATION PLAN OF ACTION

The strategies for this effort are as follows:

- 1. Manage hazardous materials, select, store and use them to attain zero penetration of wastes.
- 2. Develop processes, equipment and procedures to eliminate unnecessary disposal of hazardous wastes.
- 3. Total Quality Management (TQM) of mission activities must include ${\tt HAZMIN}$ by definition.
- 4. Change the processes which generate the wastes to produce non-hazardous wastes or reusable materials.
- 5. Encourage active employee participation to generate innovative ways to accomplish zero generation of hazardous wastes.

QUANTITY OF WASTE IN METRIC TONS FOR SENECA ARMY DEPOT

WASTE GENERATED

HW TYP	F			WAS	IE GENERATI	ΞD	
D001	Painting, cleaning/degreasing -	CY 1985	CY 1988	CY 1989	CY 1990	CY 1991	CY 1992
	ignitable solids	7.711	2.05	1.82	.832	1.924	2.155
D001	Misc ignitable liquids	1.198	.45	.227	1.317	.739	
D001	Degreasing - waste solvent	5.588	0	.45	.208		.528
D008	Steam Cleaning	19.141	47.4			.682	1.262
D002	Correctives	10.111	41.4	16.6	7.564	1.459	0
	Corrosives - Battery Maintenance	0.400	1.82	0	.624	.714	.329
F002	- Chlorinated Solvents/Soli	ds 0.454	0	.227	.832	1.136	.539
Varies	Excess, off-spec, Expired Shelf Li	ife,				1,100	.009
	unsaleable hazardous materials	13.132	0	0	416	14.959	24.854
D001	Spill Residues	0	2.27	5.68	5.612	1,761	
** T	otal for Installation	47.624	54.09	25.004		Indiana Control	9.993
D003	Open Burning/Open Detonation *		01100	20.004	17.405	23.375	39.660
		901.5	114.5	.02	711	7.963	36.737
D003	Deactivation Furnace **	58.1	43.6	2.27	0	52.462	5.517
D001	Solvent Recycled Off-Site	6.9	21.818	31.047	29.08		
				01.01/	23.08	25.561	29.124

^{*} Disposed on-site

^{**} Incinerated on-site

WASTE	POTENTIAL HAZARD	TYPICAL COMPOSITION	DRUMS/YR
WASIE	HAZARD	TIFICAL CONFOSITION	DRUHS/ IK
- Lacquer thinning liquid (D001)	Ignitable	Lacquer thinner, paint	10
- Paint thinning liquid (D001)	Ignitable	Paint thinner	10
2. PCB Wastes			
- Waste PCB hydraulic fluid (B003)	Toxic	Greater than 500 ppm PCB	. 5
- Waste PCB hydraulic fluid (B002)	Toxic	Between 50 and 500 ppm PCB	1
- PCB oil from trans- formers (B001)	Toxic	Greater than 50 ppm PCB	3
- PCB oil from trans- formers (B003)	Toxic	Greater than 500 ppm PCB	1
- PCB articles capaci- tors, transformer carcasses contaminated clothing and rags, other PCB wastes (B004), (B005), (B006), (B007)	Toxic,	Empty transformers, capacitors, rags, disposable clothing, clay absorbent	Variable
3. Incinerated Materials	100		
.50 cal Tracer M1	Reactive	Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Nitrocellulose Potassium Sulfate Diphenylamine Strontium Peroxide Strontium Oxalate Calcium Resinate Strontium Nitrate Magnesium Powder Barium Peroxide Zinc Stearate	Variable

Waste	Potential Hazard	Typical Composition	Drums/Yr
.50 Cal Armor Piercing Incendiary Tracer M20	Reactive	Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Nitrocellulose Potassium Sulfate Diphenylamine Strontium Peroxide Strontium Oxalate Calcium Resinate Strontium Nitrate	Variable
a	FC.	Magnesium Powder Barium Peroxide Zinc Stearate Aluminum	
.30 Cal Ball Match M72	Reactive	Nitrocellulose Diphenylamine Potassium Sulfate Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Aluminum PETN*	Variable
7.62 MM Ball M80	Reactive	Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Aluminum PETN*	Variable
.30 Cal Tracer Ml	Reactive	Nitrocellulose Diphenylamine Potassium Sulfate Strontium Peroxide Strontium Oxalate Calcium Resinate Strontium Nitrate Magnesium Powder Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Aluminum PETN*	Variable

Waste	Potential Hazard	Typical Composition	Drums/Yr
.30 Cal Tracer M25	Reactive	Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Aluminum PETN* Nitrocellulose Nitroglycerine Sodium Sulfate Diphenylamine Calcium Carbonate	Variable
e X		Calcium Resinate Strontium Peroxide Polyvinyl Chloride Strontium Nitrate Parlon-Chlorinated Rubber Magnesium Powder	
.50 Cal Armor Piercing Incendiary M8	Reactive	Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Nitrocellulose Nitroglycerine Sodium Sulfate Diphenylamine Calcium Carbonate Barium Nitrate Magnesium Aluminum	Variable .
.30 Cal Ball M2	Reactive	Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Aluminum PETN* Nitrocellulose Diphenylamine Potassium Sulfate	Variable
.30 Cal Armor Piercing M2	Reactive	Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Aluminum PETN*	Variable

Waste	Potential Hazard	Typical Composition	Drums/Yr
.50 Cal Ball M2	Reactive	Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide	Variable
		Nitrocellulose Nitroglycerine Sodium Sulfate Diphenylamine Calcium Carbonate	
7.62 MM Tracer M62	Reactive	Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Aluminum PETN* Nitrocellulose Nitroglycerine Sodium Sulfate Diphenylamine Calcium Carbonate Calcium Resinate Strontium Peroxide Polyvinyl Chloride Strontium Nitrate Magnesium Powder	Variable
.50 Cal Blank Ml	Reactive	Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Nitrocellulose Nitroglycerine Sodium Sulfate Diphenylamine Calcium Carbonate	Variable
.50 Cal Armor Piercing M2	Reactive	Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Nitrocellulose Nitroglycerine Sodium Sulfate Diphenylamine Calcium Carbonate	Variable

Waste	Potential Hazard	Typical Composition	Drums/Yr
Fuze, Mine Como M605	Reactive	Black Powder Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Aluminum Barium Chromate Zarconium-Nickel Alloy Potassium Perchlorate	Variable
.50 Cal Tracer M17	Reactive	Lead Styphnate Tetracene Barium Nitrate Antimony Sulfide Nitrocellulose Potassium Sulfate Diphenylamine Calcium Resinate Strontium Peroxide Strontium Oxalate Strontium Nitrate Magnesium Powder Barium Peroxide Toluidine Red Toner Zinc Stearate Parlon-Chlorinated Rubber	Variable
Fuze, PD M557	Reactive	Potassium Chlorate Antimony Sulfide Lead Azide Carborundum Lead Styphnate Barium Nitrate Tetracene Barium Chromate Boron Tetryl Vinyl Alcohol Acetate Resin	Variable

Waste	Potential Hazard	Typical Composition	Drums/Yr
Fuze, MTSQ M564		Lead Styphnate Lead Azide Barium Nitrate Antimony Sulfide Tetracene RDX(1) Potassium Chlorate Lead Thiocyanate Tetryl	Variable
Cutter, Cartridge Activated M22		Black Powder	Variable
* Pentaerythritol Tetra	nitrate		
4. Other Wastes			
- Spent battery acids (D006, D008, D002)	TCLP (Pb, Cd) Corrosive	Sulfuric Acid Pb (greater than 5 ppm) pH less than 2	10
- Paper wipes with spent acetone (F003)	Ignitable	Acetone, dirt, oil, grease, paint, etc.	3
- Paper wipes with spent toluene (F005)	Ignitable	Toluene, dirt, oil, grease, paint, etc.	3
- Unidentified liquids found on post	Variable	Determined by analysis	5
- Dust collected from APE 1236 air pollution control devices	TCLP (Ba, Pb) Corrosive	Barium (340 ppm) Lead (4) Cd, Ag, Cr, (Trace) pH 12.9 (3)	10(2)
- Miscellaneous off- specification, excess, or expired shelf-life hazardous materials	Variable	Determined by analysis as needed	10

- (1) Cyclotrimethylene trinitramine.
- (2) The amount of bag dust produced is dependent upon operation of the demilitarization incinerator (Building 367), which in turn is dependent upon mission workload and funding.
- (3) Bag dust has a pH of 12.9 when suspended in water.
- (4) Typical concentration of lead is less than 5 ppm; occasionally, results some hazardous levels. Dust is not homogeneous for lead.

- Halogenated solvents (F001, F002) spent halogenated solvents are considered hazardous due to their toxic characteristics. Included in this category are mixed recoverable or non-recoverable solvents used in degreasing and containing grease, dirt, oil, paint, dust, or filings, and cloth rags and clay absorbents contaminated with the materials. Also included here are still bottoms from 1,1,1-trichloroethene vapor degreasers.
- Non-halogenated solvents (F003, F005) paper wipes contaminated with spent toluene or acetone, dirt, oil, and grease are considered hazardous because they are ignitable or toxic.
- PCB oil (B001, B002, B003) oils and hydraulic fluids containing greater than 50 ppm PCBs drained from equipment and transformers are considered hazardous by NYSDEC due to their toxic characteristics.
- Other PCB wastes (B004, B005, B006, B007) items such as transformer carcasses, capacitors, contaminated clothing, solvents, rags, and other materials contaminated by exposure to PCBs are considered hazardous by NYSDEC due to their toxic characteristics.
- Deactivated Munitions (D003) items such as small caliber cartridges, fuzes, rocket motors, rocket igniters, and detonators that are hazardous due to their reactivity. These items are burned in the deactivation furnace. They are discussed in detail in Section D-3. The amount of munitions demilitarized each year is highly variable. It is dependent upon the condition of the stored munitions (as determined by quality assurance inspection) and the availability of funds for labor to move munitions from the storage area and to operate the furnace. In 1975, 61 tons of munitions were demilitarized in the furnace. This amount is representative of the amount incinerated each year.
- Bag dust (D002, D005, D008) dust from the incineration of reactive materials is collected by the deactivation furnace's air pollution control equipment and contains hazardous levels of barium and lead.

Because SEAD stores only those wastes generated on post from processes closely monitored for proper disposal practices, the characteristics of the wastes are precisely known. Furthermore, the composition of the wastes are not expected to change without the SEAD's knowledge beforehand, or without indications that an operator error had occurred in the waste producing process. The wastes burned in the deactivation furnace are strictly waste munitions produced under rigid Department of Army specifications; therefore, their composition is also well known. As a result of having extensive knowledge of the types and characteristics of wastes, SEAD requires only infrequent testing to verify that the waste contents have not changed. The tests and procedures for determining changes in characteristics are described in the waste analysis plan.

7. HAZMIN ACTIONS:

a. General: The actions taken to minimize the volume and toxicity of HW at Seneca will be IAW Chapter 3 of the AMC HAZMIN Plan.

Seneca will use the 1985 NYS Facility Hazardous Waste Report (Appendix A) as its "baseline" HW data summary to assess changes in the volume and toxicity of Seneca's HW, IAW the AMC HAZMIN Plan.

Any use of a Hazardous Material, or Hazardous Material-Using Process that:

- (1) may produce a HW by excess materials and/or
- (2) will produce a (new) HW that is not on the 1985 Facility HW Report, and/or $\frac{1}{2}$
 - (3) will produce an increase in toxicity of HW's and/or
- (4) will produce an increase in the volume of HW's on Seneca's baseline,

must be approved by the SEAD HAZMIN Board. SPECIAL NOTE: On or off-post recycling of solvents are regulated as HW's under the RCRA, and as such are subject to approval under this plan.

ANY CHANGES TO THE BASELINE HW DATA MUST BE APPROVED PRIOR TO IMPLEMENTATION BY DESCOM, IAW THE AMC HAZMIN PLAN. ANY USE, NEW PROCESS, OR OTHER ACTIONS WHICH WILL PRODUCE AN INCREASE IN VOLUME OR TOXICITY IN SENECA'S HW BASELINE, THAT IS APPROVED BY THE SEAD HAZMIN BOARD, WILL BE REFERRED THROUGH ENVIRONMENTAL CHANNELS TO DESCOM FOR APPROVAL PRIOR TO IMPLEMENTATION.

The SEAD HAZMIN Board will:

- (1) Maintain a list of approved uses of hazardous materials (including authorized users).
 - (2) Maintain a list of disapproved uses of hazardous materials.
 - (3) Review all new HM Assessments for approval/disapproval.
 - (4) Review all presently used HM.
- (5) Meet quarterly to review HM Use Assessment submittals (see appendix B).

Once a use of a HM is disapproved by either the SEAD HAZMIN Board or DESCOM, it will not be reviewed again by the SEAD HAZMIN Board.

Hazardous Materials Control:

- (1) General: Close management of HM (not wastes) is an effective way to reduce the generation of HW. The following guidelines aid the minimization of excess, off-specification, or expired shelf-life HM:
 - (a) Only authorized users can acquire HM.
 - (b) Only those materials needed for a job are issued.
- (c) Issuing HM in the minimum quantity needed to minimize shelf-life expirations.
 - (d) HM's are properly labelled.
 - (e) Personnel receive training in how to use the HM's.
- (f) Personnel receive training in how to dispose of HM when they become wastes.
- (2) Committee: The SEAD HAZMIN Board will act as the SEAD Hazardous Materials Control Committee (HMCC) IAW the AMC HAZMIN Plan, and will coordinate the management, use, and control of HM's on Seneca.
- (3) Material Control: Excess, off-specification, and expired shelf-life (EOE) HM's often are disposed as HW. The goal of HM Control under this plan is to eliminate this source of HW through management procedures. For the purposes of this plan, any EOE HM's are presumed to be preventable. As a last resort, on-post reutilization, prior to turn-in to DRMO, should be explored in the interim to achieving the HAZMIN goal.
 - (4) Training and Responsibilities:
- (a) Training: The HMCC will implement spill prevention training for personnel involved with HM handling. Although HM handling training is presently occurring, training, personal responsibilities, and formal procedures can prevent spills and the resultant HW residues.
- (b) Responsibilities: The organization or activity and supervisors which are accountable for the HM, the storage of the HM, and/or the use of the HM, are responsible for elimination of EOE HM's, training personnel involved, and spill prevention.
- (5) Hazardous Materials Control Officer: All organizations or activities on Seneca will establish a Hazardous Materials Control Officer IAW the AMC HAZMIN Plan.
- (6) Procurement Guidelines: Procurement or acquisition specifications frequently do not address material composition. HM control can be accomplished by requiring the use, where possible, of non-hazardous or least hazardous materials to meet performance specifications. Diminishing delivery orders and suppliers' responsibilities to meet specifications may be used to control EOE HM's.

Baseline HW Minimization: Recent efforts are summarized in Section 3, Background. Baseline HW's and HW's indicated in Table I, Section 3, Background, will be minimized on a waste-by-waste basis with the following priorities:

- (1) Volume and Toxicity Minimization (most volume, most toxic will have highest priority).
- (2) The Used Solvent Elimination (USE) Program's goal is the elimination of the disposal of recyclable solvents as wastes by 1 Oct 86. (On a waste-by-waste basis, used solvents are the #1 HAZMIN priority.)
- (3) Treatment and Material Substitution: Generators will work closely, as needed, with the SEAD HW Officer in developing suitable treatment methods and material substitution. (Paint and lacquer thinners will be reclaimed as recoverable solvents.)

All liquid HW's will be treated to separate solids and/or non-hazardous components to minimize the volume of HW generated.

Process changes will be explored as a "treatment" or substitution alternative.

- (4) Hazardous Material Control will eliminate EOE HM's from disposal as HW's. An active on-post reutilization program, prior to turn-in for DRMO reutilization/sales, will be implemented.
- (5) PCB Management: PCB decontamination operations in IPE generate various PCB contaminated HW's, including PCB-contaminated waste solvents, oils, and solids. Since decreasing the volume of PCB contaminated solvents through distillation will increase the toxicity (PCB concentration) of either the bottoms or distillate, PCB-contaminated solvents will be not be included in the USE Program as a normal solvent. PCB-contaminated fluids, between 50-500 ppm or greater than 500 ppm will be disposed untreated as PCB-contaminated fluid or PCB fluids, respectively. Used solvent or oil/solvent mixtures which test less than 50 ppm will not be recycled in a non-PCB distillation unit. This will prevent concentrations greater than 50 ppm in any resulting distillate or bottoms.

Reclaimation, by either distillation or filtration with reuse within the PCB decontamination processes, will be explored with the following priorities:

- (a) Regulatory acceptability.
- (b) Quality control of decontamination operations.
- (c) Minimization of waste streams.

New York State Department of Environmental Conservation 50 Wolf Road, Albany, New York 12233



Thomas C. Jorling Commissioner

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Randall Battaglia Environmental Engineer Department of the Army Seneca Army Depot Route 96 Romulus, NY 14581

APR 2 4 1992

40 APR RECO

RE: Hazardous Waste Compliance Inspection Date: Sept. 25, 1991 Location of Handler: Same as Above

EPA Identification Number: NY0213820830

Dear Mr. Battaglia:

A warning letter dated November 22, 1991 was sent to you identifying violations of the New York State Hazardous Waste Regulations. This letter required a response indicating that you had taken corrective action. As of the date stamped above on this letter, no response has been received. A copy of the warning letter is enclosed.

You must respond, in writing within 15 days of the date stamped on this letter, to avoid the initiation of enforcement proceedings. Please be sure to include your EPA Identification Number on all correspondence.

Send your response to:

Mr. Dixon Rollins, P.E.
Regional Hazardous Substances Engineer
New York State Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, NY 14414
(716) 226-2466

with a copy to:

New York State Department of Environmental Conservation Division of Hazardous Substances Regulation Bureau of Hazardous Waste Facility Compliance Compliance Inspection Section 50 Wolf Road - Room 208/204 Albany, NY 12233-7252 (518) 457-0532 Attention: Mr. Arvind Goswami, Reviewer

Ind 1

If a response has already been sent, please disregard this letter.

Sincerely,

Janakrai M. Desai, P.E.

Chief

Compliance Inspection Section Bureau of Hazardous Waste Facility

Compliance

Division of Hazardous Substances

Regulation

Enclosure

cc: w/o enc: D. Rollins, RHSE, Region 8

A. Goswami, Reviewer, Central Office

NIS

New York State Department of Environmental Conservation 50 Wolf Road, Albany, New York 12233



CERTIFIED MAIL, RETURN RECEIPT REQUESTED

WL#

NOV 2 2 1991

Thomas C. Jorling Commissioner

Mr. Randall Battaglia Environmental Engineer Department of the Army Seneca Army Depot Route 96 Romulus, NY 14581

RE: Hazardous Waste Compliance Inspection Date: September 25, 1991

Location of Handler: Same as Above

EPA Identification Number: NY0213820830

Dear Mr. Battaglia:

In order to determine compliance with the New York State Hazardous Waste Regulations, the New York State Department of Environmental Conservation conducted an inspection of your facility on the above referenced date.

As a result of that inspection, we believe that your facility is operating as a generator and a treater, storer and/or disposer of hazardous waste.

The following violations pertain only to the mixed waste operation/portion of the facility: (The violations found at the hazardous waste inspection dated September 16, 1991 were sent to you in a letter dated October 17, 1991.)

6NYCRR Part 372.2(a)(8) requires that each container is marked with the words "Hazardous Waste". You have not met this requirement and, therefore, are in violation of 6NYCRR Part 372.2(a)(8).

6NYCRR Part 373-3.9(d) requires generators who accumulate hazardous waste in containers to manage such containers as set forth below:

a container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

You have not met the above requirements and, therefore, are in violation of 6NYCRR Part 373-3.9(d).

6NYCRR Part 373-3.9(e) requires that the owner or operator must inspect container storage areas at least weekly looking for leaking

containers and for deterioration of containers and the containment system caused by corrosion or other factors. You have not met this requirement and, therefore, are in violation of 6NYCRR Part 373-3.9(e).

6NYCRR Part 373-3.2(h)(1) requires that the owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction. While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flames to specially designated locations. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive wastes. You have not complied with this requirement and, therefore, are in violation of 6NYCRR Part 373-3.2(h)(1).

6NYCRR Part 373-3.2(g)(1),(2),(3) requires that facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this Subpart. In addition, the owner or operator must ensure that:

 facility personnel take part in an annual review of the initial training required.

You have not met the above requirement(s) and, therefore, are in violation of 6NYCRR Part 373-3.2(g)(1),(2),(3).

6NYCRR Part 373-3.3(c) requires that all facilities must be equipped with the following, unless none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:

- fire control equipment.
- water available to supply hose streams.

Your facility does not meet the above requirements and, therefore, is in violation of 6NYCRR Part 373-3.3(c).

6NYCRR Part 373-3.4(e) requires the Contingency Plan must be reviewed, and immediately amended, if necessary, whenever:

- applicable regulations are revised;
- the Plan fails in an emergency;
- the facility changes--in its design, construction, operation, maintenance or other circumstances--in a way that materially increase the potential for fires, explosions, or releases of

hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

- the list of emergency coordinators changes; or
- the list of emergency equipment changes.

You have not met this requirement and, therefore, are in violation of 6NYCRR Part 373-3.4(e).

6NYCRR Part 373-3.2(e) requires an owner or operator to prevent the unknowing entry, and minimize the possibility for the unauthorized entry unless physical contact with the waste structures, or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility; and disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of this Subpart. A facility must have the following:

- a sign with the legend, "Danger - Unauthorized Personnel Keep Out," must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion.

You have not met the above requirement(s) and, therefore, are in violation of 6NYCRR Part 373-3.2(e).

6NYCRR Part 373-3.2(f)(2) requires that: (\underline{i}) The owner or operator must develop and follow a written schedule for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards and ($\underline{i}\underline{i}$) He must keep this schedule at the facility. You have not met these requirements and, therefore, are in violation of 6NYCRR Part 373-3.2(f)(2).

6NYCRR Part 373-3.2(f)(2)(iii) requires a written inspection schedule which identifies the types of problems which are to be looked for during the inspection. You have not met this requirement and, therefore, are in violation of 6NYCRR Part 373-3.2(f)(2)(iii).

6NYCRR Part 373-3.5(c) requires the owner or operator of a hazardous waste facility to keep a written operating record at his facility. The following information should be included in the operating record, as it becomes available, or maintained in the operating record until closure of the facility:

 the method(s) and date(s) of its treatment, storage or disposal at the facility. You have not met the above requirement(s) and, therefore, are in violation of 6NYCRR Part 373-3.5(c).

6NYCRR Part 373-3.7(c)(3)(i) requires that the owner or operator must amend the closure plan whenever changes in operating plans or facility design affect the closure plan, or there is a change in the expected year of closure. You have not met this requirement and, therefore, are in violation of 6NYCRR Part 373-3.7(c)(3)(i).

Violations of the New York State Hazardous Waste Regulations may result in civil and criminal sanctions under the Environmental Conservation Law. Possible sanctions include a civil penalty of up to \$25,000 per day for a first offense and \$50,000 per day for a second offense. Should the cited violations not be corrected promptly, an action seeking a civil penalty will be initiated. Furthermore, please be advised that this letter in no way precludes future enforcement actions for any other violations discovered at any other time, nor does it relieve you from any liability you may have for regulatory fees.

Please confirm in writing, within 30 days of the date of this letter, that the above referenced violations have been corrected and include supporting documentation. You <u>MUST</u> include your EPA Identification Number on all correspondence. This confirmation should be addressed to:

Mr. Dixon Rollins, P.E.
Regional Hazardous Substances Engineer
New York State Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, New York 14414
(716) 226-2466

with a copy to:

NYS Department of Environmental Conservation Division of Hazardous Substances Regulation Bureau of Hazardous Waste Facility Compliance Compliance Inspection Section 50 Wolf Road - Room 208/204 Albany, New York 12233-7252 (518) 457-0532 Attention: Mr. Arvind Goswami, Reviewer

If you have any questions about this notice or should you wish to discuss this matter further, please contact the Inspector or the Reviewer

at the telephone number above. A copy of the Inspection Form is enclosed for your information.

Sincerely,

Janakrai M. Desai, P.E.

Chief

Compliance Inspection Section

Bur. of Hazardous Waste Facility Compliance

Div. of Hazardous Substances Regulation

Enclosure

cc: D. Rollins, RHSE, Region 8

D. Stephens, Inspector, Central Office

A. Goswami, Reviewer, Central Office

New York State Department of Environmental Conservation



85 Metro Park Rochester, NY 14623

585.475.1440 Fax: 585.272.1814

ТО	Thomas Enroth	ı						
	2022 White Fe	ather Lane		DATE 10/01/0	3	PROJ. NO. 1590602		
	Nokomis, FL 3	4270		RE Seneca Ai	my Depot -	Historic Sites		
			 3			The state of the s		
			*					
ATTN	Thomas Enroth							
WE ARE	SENDING YOU		☐ Un	der Separate Cover		mitted Via FED EX		
⊠ Pr	ints	Reproducible	es 🗌 Spo	ecifications	8 <u>9=85</u> 77	Drawings		
☐ Co	ppy of Letter	☐ Change Orde	er 🗌					
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COPIES	DRAWING	DATE		DESC	CRIPTION			
1 each		10/1/03		.163, 6.185, 6.186, 6.	189, 6.192, 6.	198, 6.218, 6.223, 6.229,		
			6.243					
1		10/1/03	Suggested Lega	Suggested Legal Descriptions of each site listed above				
1			Computer print	out each				
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☐ For Ap	pproval	As Requested	\boxtimes	For Your Use	\boxtimes	For Review and Comment		
COMMEN Tom,	NTS							
	ng maps will be ser	nt out on Friday. We	will send to the	Depot.				
				Carrier and Carrie				
1								
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LT004enroth	for the second							

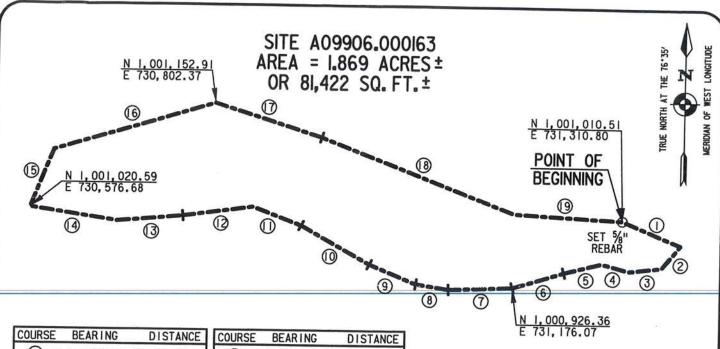
#SB-AD-01 (01/02)



85 Metro Park Rochester, NY 14623

585.475.1440 Fax: 585.272.1814

TO	GEO-MARINI	E, INC.				
	550 East 15 th S	Street		DATE 10/01/0	3	PROJ. NO. 1590602
	Plano, Texas 75	5074		RE Seneca Ar	my Depo	ot - Historic Sites
ATTN	Melissa M. Gre	een, RPA				
				100		
WE ARE	SENDING YOU			Under Separate Cover	⊠ Tr	ransmitted Via FED EX
□ Pr	rints	Reproducible	s 🗌	Specifications	☐ Sh	nop Drawings
☐ Co	opy of Letter	☐ Change Order	r 🗆 .			
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-			31/21			
TRANSM For A	ITTED pproval			For Your Use	[For Review and Comment
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All remain	ing maps will be se	ent out on Friday.				
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	COURS	SE BEARING		DISTANCE
	1	S 67°25′ 13"	Ε	78.68
	2	S 39°29′59"	₩	35.55
	3	S 83°18′43"	W	40.71
	4	N 75°07′43"	W	35.37
I	(5)	S 75°50′ 39"	W	47.99
I	6	S 73°17′10"	W	66.43
I	7	S 87°45′33"	W	79.46
I	8	N 81°25′38"	W	41.03
I	9	N 68°00′35"	W	63.21
	(1)	N 61°13′53"	W	98.29

COURS	Ε	BE	ARI	NG		DISTANCE
0	N	69	•20	′ 28"	W	64.75
1	S	82	°09	′ 08"	W	87.68
(3)	S	85	°04′	17"	W	80.84
(4)	N	81	°18′	06"	W	107.91
(5)	N	21	35	09"	Ε	77.76
6	N	73	03′	56"	Ε	206.01
0	S	72	21	56"	Ε	139.60
(8)	S	68°	58′	57"	Ε	258.69
(9)	S	86°	52′	02"	Ε	134.12

SURVEY NOTES:

- I. THE HORIZONTAL DATUM SHOWN HEREON IS REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM OF 1983 (CORS 96), CENTRAL ZONE, TRANSVERSE MERCATOR CONFORMAL PROJECTION OF THE NORTH AMERICAN DATUM OF 1983, UTILIZING GPS OBSERVATIONS AND THE NATIONAL GEODETIC SURVEY'S ONLINE USER POSITIONING SERVICE (OPUS) AND THE FOLLOWING MONUMENTS:
 - DF5882 NYMC ROCHESTER OPS CNT CORS ARP: LAT. N43°06'41.28127" LON. W77°36'51.81170" N 1135393.399 E 544892.421
 - CQ6022 OSPA OSWEGO PORT AUTHO CORS ARP: LAT. N43°27′53.55811" LON. W76°30′41.49799" N 1262516.825 E 839271.425
 - A12155 SYCN SYRACUSE CORS ARP: LAT. N43°06′56.57897" LON. W76°05′36.22124" N 1135631.334 E 951023.534
- BOUNDARY LINES SHOWN HEREON REPRESENT THE LIMITS OF AN ARCHAEOLOGICAL HISTORIC SITE AS FLAGGED IN THE FIELD BY GEO-MARINE, INC. AND FIELD LOCATED BY SEAR-BROWN IN SEPTEMBER 2003.



J. JAUN

S. SMITH

SCALE |" = 120' FRST ISSUE DATE



US Army Corps of Engineers New York District INTENSIVE CULTURAL RESOURCES SURVEY SENECA ARMY DEPOT, TOWN OF ROMULUS SENECA COUNTY, NEW YORK

HISTORIC SITE NO. A09906.000163

PROJECT NO 1590602

DRAWING NO.

All that tract or parcel of land containing 1.869 acres, more or less, situate on lands of now or formerly the Seneca Army Depot, in the Town of Romulus, County of Seneca, State of New York, as shown on a map entitled "Intensive Cultural Resources Survey – Historic Site No. A09906.000163", dated October 1, 2003 and having Drawing No. 1590602 6.163 and being more particularly bounded and described as follows:

Beginning at a set 5/8" rebar having grid coordinates of N = 1,001,010.51; E = 731,310.80 of the New York State Plane Coordinate System of 1983 (Cors 96), Central Zone, transverse mercator conformal projection of the North American Datum of 1983; thence

- S 67°25'13" E (bearings are based on the grid meridian of said Central Zone), a distance of 78.68 feet to a point; thence
- 2. S 39°29'59" W, a distance of 35.55 feet to a point; thence
- 3. S 83°18'43" W, a distance of 40.71 feet to a point; thence
- 4. N 75°07'43" W, a distance of 35.37 feet to a point; thence
- 5. S 75°50'39" W, a distance of 47.99 feet to a point; thence
- 6. S 73°17'10" W, a distance of 66.43 feet to a point; thence
- 7. S 87°45'33" W, a distance of 79.46 feet to a point; thence
- 8. N 81°25'38" W, a distance of 41.03 feet to a point; thence
- 9. N 68°00'35" W, a distance of 63.21 feet to a point; thence
- 10. N 61°13'53" W, a distance of 98.29 feet to a point; thence
- 11. N 69°20'28" W, a distance of 64.75 feet to a point; thence
- 12. S 82°09'08" W, a distance of 87.68 feet to a point; thence
- 13. S 85°04'17" W, a distance of 80.84 feet to a point; thence
- 14. N 81°18'06" W, a distance of 107.91 feet to a point; thence
- 15. N 21°35'09" E, a distance of 77.76 feet to a point; thence

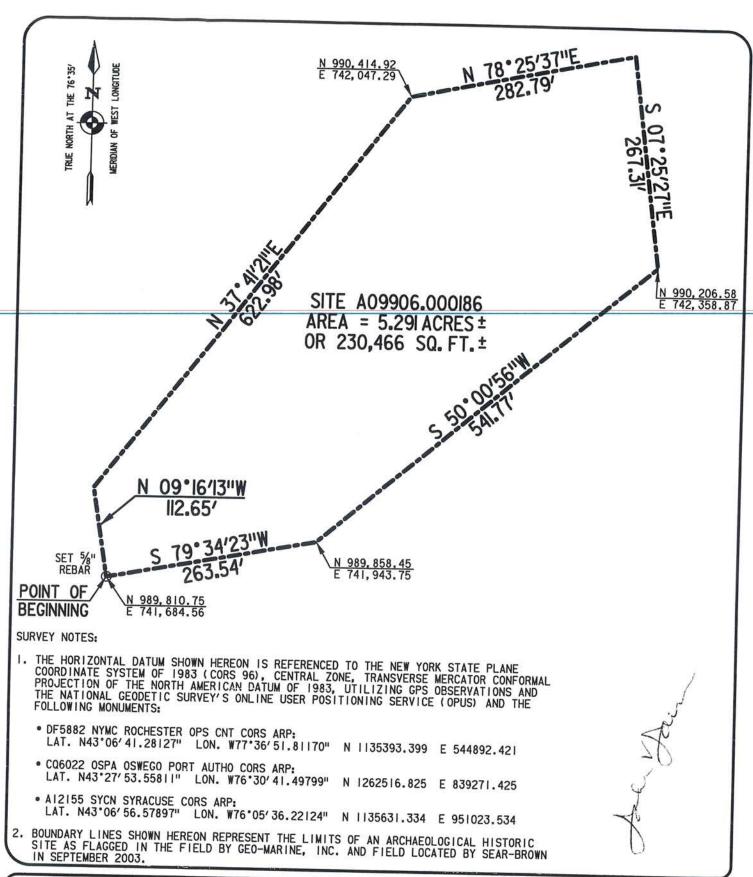
- 16. N 73°03'56" E, a distance of 206.01 feet to a point; thence
- 17. S 72°21'56" E, a distance of 139.60 feet to a point; thence
- 18. S 68°58'57" E, a distance of 258.69 feet to a point; thence
- 19. S 86°52'02" E, a distance of 134.12 feet to a point, said point being the Point or Place of Beginning.

Project Name: default Description:

Horizontal Alignment Name: 32
Description: SITE A09906.000163

	Debe	Style:		79900.000163		
		beyre.	MIDC	STATION	NORTHING	EASTING
Element:	POB (PI (Tangent D:	6169) 6168) irection: t Length:	S	-8+19.98 -7+41.30 67^25'13" E 78.68	1001010.51 1000980.30	731310.80 731383.45
Element:	PI (PI (Tangent Di	6168) 6167) irection: Length:	S	-7+41.30 -7+05.75 39^29'59" W 35.55	1000980.30 1000952.86	731383.45 731360.83
Element:	Linear					
	PI (PI (Tangent Di Tangent	6167) 6166) rection: Length:	S	-7+05.75 -6+65.04 83^18'43" W 40.71	1000952.86 1000948.12	731360.83 731320.40
Element:	PI (PI (Tangent Di	6166) 6165) rection: Length:	N	-6+65.04 -6+29.67 75^07'43" W 35.37	1000948.12 1000957.20	731320.40 731286.22
Element:	PI (PI (Tangent Di	6165) 6164) rection: Length:	S	-6+29.67 -5+81.68 75^50'39" W 47.99	1000957.20 1000945.47	731286.22 731239.69
Element:	PI (PI (Tangent Di	6164) 6163) rection: Length:	S	-5+81.68 -5+15.26 73^17'10" W 66.43	1000945.47 1000926.36	731239.69 731176.07
Element:	PI (PI (Tangent Di:	6163) 6162) rection: Length:	S	-5+15.26 -4+35.80 87^45'33" W 79.46	1000926.36 1000923.25	731176.07 731096.67
Element:	PI (PI (Tangent Dir	6162) 6161) rection: Length:	N	-4+35.80 -3+94.77 81^25'38" W 41.03	1000923.25 1000929.37	731096.67 731056.10
Element:	Linear PI (PI (Tangent Din Tangent		N	-3+94.77 -3+31.56 68^00'35" W 63.21	1000929.37 1000953.04	731056.10 730997.49
Element:	Linear PI (PI (6160) 6159)		-3+31.56 -2+33.27	1000953.04 1001000.34	730997.49 730911.33

	Tangent Direction: Tangent Length:	N 61 ¹³ '53" W 98.29		
Element	: Linear PI (6159) PI (6158) Tangent Direction: Tangent Length:	-2+33.27 -1+68.52 N 69^20'28" W 64.75	1001000.34 1001023.19	730911.33 730850.74
Element	: Linear PI (6158) PI (6157) Tangent Direction: Tangent Length:	-1+68.52 -0+80.84 S 82^09'08" W 87.68	1001023.19 1001011.22	730850.74 730763.89
Element	: Linear PI (6157) PI (6156) Tangent Direction:	-0+80.84 0+00.00 S 85^04'17" W	1001011.22 1001004.27	730763.89 730683.35
	Tangent Length:	80.84		
Element:	PI (6156) PI (6174) Tangent Direction: Tangent Length:	0+00.00 1+07.91 N 81^18'06" W 107.91	1001004.27 1001020.59	730683.35 730576.68
Element:	PI (6174) PI (6173) Tangent Direction: Tangent Length:	1+07.91 1+85.67 N 21^35'09" E 77.76	1001020.59 1001092.90	730576.68 730605.29
Element:	Linear PI (6173) PI (6172) Tangent Direction: Tangent Length:	1+85.67 3+91.68 N 73^03'56" E 206.01	1001092.90 1001152.91	730605.29 730802.37
Element:	Linear PI (6172) PI (6171) Tangent Direction: Tangent Length:	3+91.68 5+31.28 S 72^21'56" E 139.60	1001152.91 1001110.62	730802.37 730935.40
Element:	Linear PI (6171) PI (6170) Tangent Direction: Tangent Length:	5+31.28 7+89.97 S 68 ⁵⁸ '57" E 258.69	1001110.62 1001017.84	730935.40 731176.88
Element:	Linear PI (6170) POE (6169) Tangent Direction: Tangent Length:	7+89.97 9+24.09 S 86^52'02" E 134.12	1001017.84 1001010.51	731176.88 731310.80
Area:	81422.069 sq.feet	1.869 acres		



ľ	COPYRIGHT ©2003
ı	DRAWING ALTERATION
	IT IS A VOLATION OF LAW FOR MY PERSON, UNLESS ACTING UNDER THE DRECTION OF LICENSED ARCHITECT, PROFESSIONAL DIGNEER, LAUDSCAPE ARCHITECT, OR LAND SURVEYOR TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY RAY.
ı	ANY LICENSEE WHO ALTERS THIS

TOTAL OF LOG SUPETON TO ANY TRAIN ON THIS COCLAMENT ANY TRAIN OF THE TOTAL THE TOTAL OF THE TOTAL SUPETITIES FECURED BY LIB TO TOTAL OF THE SELL AND THE TATION "ALTERED BY" FOLLOWED BY ON PER SCHALLER AND SPECIFIC COMPTION OF THE ALTERATIONS. OLECT ENGNEER/ARCHITECT

PROJECT MANAGER

J. JAUN

ORANN BY
S. SMITH
SCALE FRST ISSUE DATE
|| = |20' | |0/01/03|

US Army Corps of Engineers New York District INTENSIVE CULTURAL RESOURCES SURVEY
SENECA ARMY DEPOT, TOWN OF ROMULUS

SENECA COUNTY, NEW YORK

TITLE OF DRAWING

HISTORIC SITE NO. A09906.000186

PROJECT NO. 1590602

DRAWING NO.

All that tract or parcel of land containing 5.291 acres, more or less, situate on lands of now or formerly the Seneca Army Depot, in the Town of Romulus, County of Seneca, State of New York, as shown on a map entitled "Intensive Cultural Resources Survey – Historic Site No. A09906.000186", dated October 1, 2003 and having Drawing No. 1590602 6.186 and being more particularly bounded and described as follows:

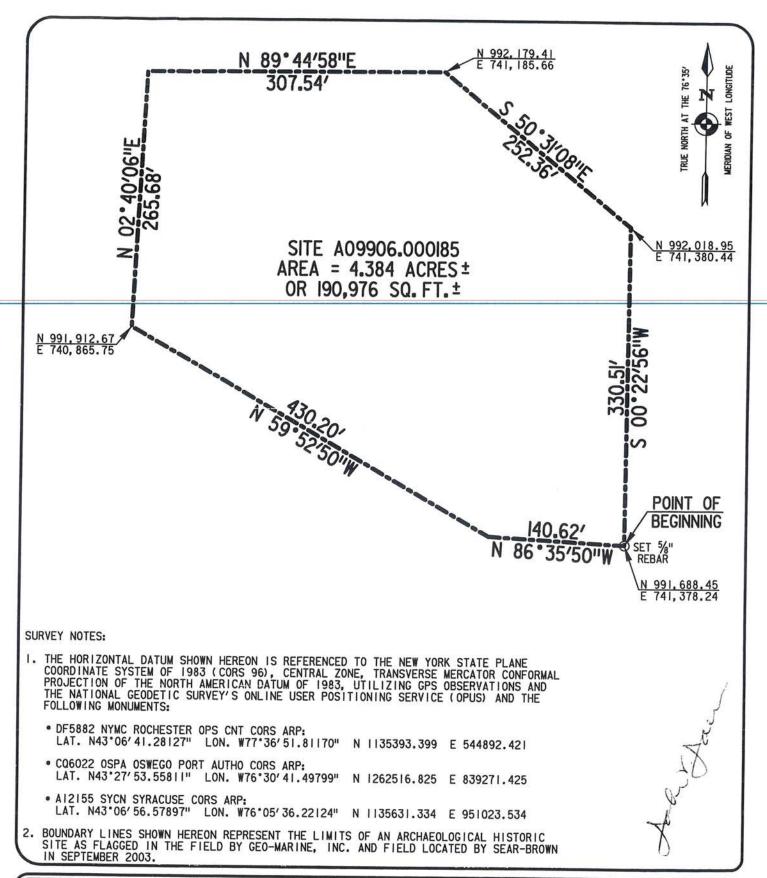
Beginning at a set 5/8" rebar having grid coordinates of N = 989,810.75; E = 741,684.56 of the New York State Plane Coordinate System of 1983 (Cors 96), Central Zone, transverse mercator conformal projection of the North American Datum of 1983; thence

- 1. N 09°16'13" W (bearings are based on the grid meridian of said Central Zone), a distance of 112.65 feet to a point; thence
- 2. N 37°41'21" E, a distance of 622.98 feet to a point; thence
- 3. N 78°25'37" E, a distance of 282.79 feet to a point; thence
- 4. S 07°25'27" E, a distance of 267.31 feet to a point; thence
- 5. S 50°00'56" W, a distance of 541.77 feet to a point; thence
- 6. S 79°34'23" W, a distance of 263.54 feet to a point, said point being the Point or Place of Beginning.

Area: 230465.639 sq.feet 5.291 acres

Project Name: default
Description:
Horizontal Alignment Name: 19
Description: SITE A09906.000186
Style: MISC

	Style: MISC		STATION	NORTHING	EASTING
Element:	Linear POB (6102) PI (6103) Tangent Direction: Tangent Length:	N	-10+18.42 -9+05.77 9^16'13" W 112.65	989810.75 989921.93	741684.56 741666.41
Element:	PI (6103) PI (6104) Tangent Direction: Tangent Length:	N	-9+05.77 -2+82.79 37^41'21" E 622.98	989921.93 990414.92	741666.41 742047.29
Element:	PI (6104) PI (6099) Tangent Direction: Tangent Length:	N	-2+82.79 0+00.00 78^25'37" E 282.79	990414.92 990471.65	742047.29 742324.33
Element:	Linear PI (6099) PI (6100) Tangent Direction: Tangent Length:	S	0+00.00 2+67.31 7^25'27" E 267.31	990471.65 990206.58	742324.33 742358.87
Element:	Linear PI (6100) PI (6101) Tangent Direction: Tangent Length:	S	2+67.31 8+09.08 50^00'56" W 541.77	990206.58 989858.45	742358.87 741943.75
Element:	Linear PI (6101) POE (6102) Tangent Direction: Tangent Length:	S	8+09.08 10+72.63 79^34'23" W 263.54	989858.45 989810.75	741943.75 741684.56





OJECT ENGNEER/ARCHITECT

PROJECT MANAGES J. JAUN

| GRAWN BY | S. SMITH | SCALE | FRST ISSUE DATE | 10/01/03

US Army

US Army Corps of Engineers New York District INTENSIVE CULTURAL RESOURCES SURVEY
SENECA ARMY DEPOT, TOWN OF ROMULUS
SENECA COUNTY, NEW YORK

TITLE OF DRAWING
HISTORIC SITE NO. A09906.000185

1590602 DRAWING NO.

All that tract or parcel of land containing 4.384 acres, more or less, situate on lands of now or formerly the Seneca Army Depot, in the Town of Romulus, County of Seneca, State of New York, as shown on a map entitled "Intensive Cultural Resources Survey – Historic Site No. A09906.000185", dated October 1, 2003 and having Drawing No. 1590602 6.185 and being more particularly bounded and described as follows:

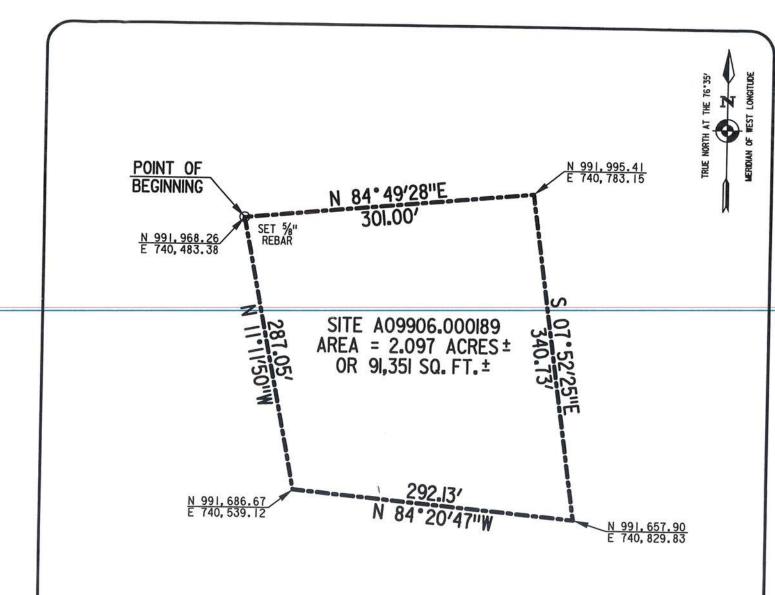
Beginning at a set 5/8" rebar having grid coordinates of N = 991,688.45; E = 741,378.24 of the New York State Plane Coordinate System of 1983 (Cors 96), Central Zone, transverse mercator conformal projection of the North American Datum of 1983; thence

- 1. N 86°35'50" W (bearings are based on the grid meridian of said Central Zone), a distance of 140.62 feet to a point; thence
- 2. N 59°52'50" W, a distance of 430.20 feet to a point; thence
- 3. N 02°40'06" E, a distance of 265.68 feet to a point; thence
- 4. N 89°44'58" E, a distance of 307.54 feet to a point; thence
- 5. S 50°31'08" E, a distance of 252.36 feet to a point; thence
- 6. S 00°22'56" W, a distance of 330.51 feet to a point, said point being the Point or Place of Beginning.

Area: 190975.987 sq.feet 4.384 acres

Project Name: default
Description:
Horizontal Alignment Name: 17
Description: SITE A09906.000185
Style: MISC

	55,2555		STATION	NORTHING	EASTING
Element:	Linear POB (6085) PI (6084) Tangent Direction: Tangent Length:	N	-1+40.62 0+00.00 86^35'50" W 140.62	991688.45 991696.80	741378.24 741237.87
Element:	PI (6084) PI (6089) Tangent Direction: Tangent Length:	N	0+00.00 4+30.20 59^52'50" W 430.20	991696.80 991912.67	741237.87 740865.75
Element:	PI (6089)		4+30.20	991912.67	740065 75
	PI (6088) Tangent Direction: Tangent Length:	N	6+95.88	992178.06	740865.75 740878.12
Element:	Linear PI (6088) PI (6087) Tangent Direction: Tangent Length:	N	6+95.88 10+03.42 89^44'58" E 307.54	992178.06 992179.41	740878.12 741185.66
Element:	Linear PI (6087) PI (6086) Tangent Direction: Tangent Length:	S	10+03.42 12+55.78 50^31'08" E 252.36	992179.41 992018.95	741185.66 741380.44
Element:	Linear PI (6086) POE (6085) Tangent Direction: Tangent Length:	S	12+55.78 15+86.29 0^22'56" W 330.51	992018.95 991688.45	741380.44 741378.24



SURVEY NOTES:

- 1. THE HORIZONTAL DATUM SHOWN HEREON IS REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM OF 1983 (CORS 96), CENTRAL ZONE, TRANSVERSE MERCATOR CONFORMAL PROJECTION OF THE NORTH AMERICAN DATUM OF 1983, UTILIZING GPS OBSERVATIONS AND THE NATIONAL GEODETIC SURVEY'S ONLINE USER POSITIONING SERVICE (OPUS) AND THE FOLLOWING MONUMENTS:
 - DF5882 NYMC ROCHESTER OPS CNT CORS ARP: LAT. N43°06'41.28127" LON. W77°36'51.81170" N 1135393.399 E 544892.421
 - CQ6022 OSPA OSWEGO PORT AUTHO CORS ARP: LAT. N43°27'53.55811" LON. W76°30'41.49799" N 1262516.825 E 839271.425
 - A12155 SYCN SYRACUSE CORS ARP: LAT. N43°06′56.57897" LON. W76°05′36.22124" N 1135631.334 E 951023.534
- BOUNDARY LINES SHOWN HEREON REPRESENT THE LIMITS OF AN ARCHAEOLOGICAL HISTORIC SITE AS FLAGGED IN THE FIELD BY GEO-MARINE, INC. AND FIELD LOCATED BY SEAR-BROWN IN SEPTEMBER 2003.



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DAMNE ALTENTON

IT IS A VOLATION OF LAY FOR MY
PERSON, UNLESS ACTIVE LINGE THE
PRESCRIPTION OF LAY FOR MY
PERSONAL DEADER, LANGSCAPE
ARCHITECT, OR LAND SURPEYOR TO
ALTER MY THAN ON LITES THES
ANY LICENSE WAS ARREST AND LITES THES
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NOJECT ENGINEER/ARCHITECT

PROJECT MANAGE J. JAUN

S. SMITH

5. SMITH

SCALE FRST ISSUE DATE

|" = 100' | 10/01/03



US Army Corps of Engineers New York District PROJECT

INTENSIVE CULTURAL RESOURCES SURVEY SENECA ARMY DEPOT, TOWN OF ROMULUS SENECA COUNTY, NEW YORK

TITLE OF DRAWING
HISTORIC SITE NO. A09906.000189

PROJECT NO. 1590602

RAWING NO.

All that tract or parcel of land containing 2.097 acres, more or less, situate on lands of now or formerly the Seneca Army Depot, in the Town of Romulus, County of Seneca, State of New York, as shown on a map entitled "Intensive Cultural Resources Survey – Historic Site No. A09906.000189", dated October 1, 2003 and having Drawing No. 1590602 6.189 and being more particularly bounded and described as follows:

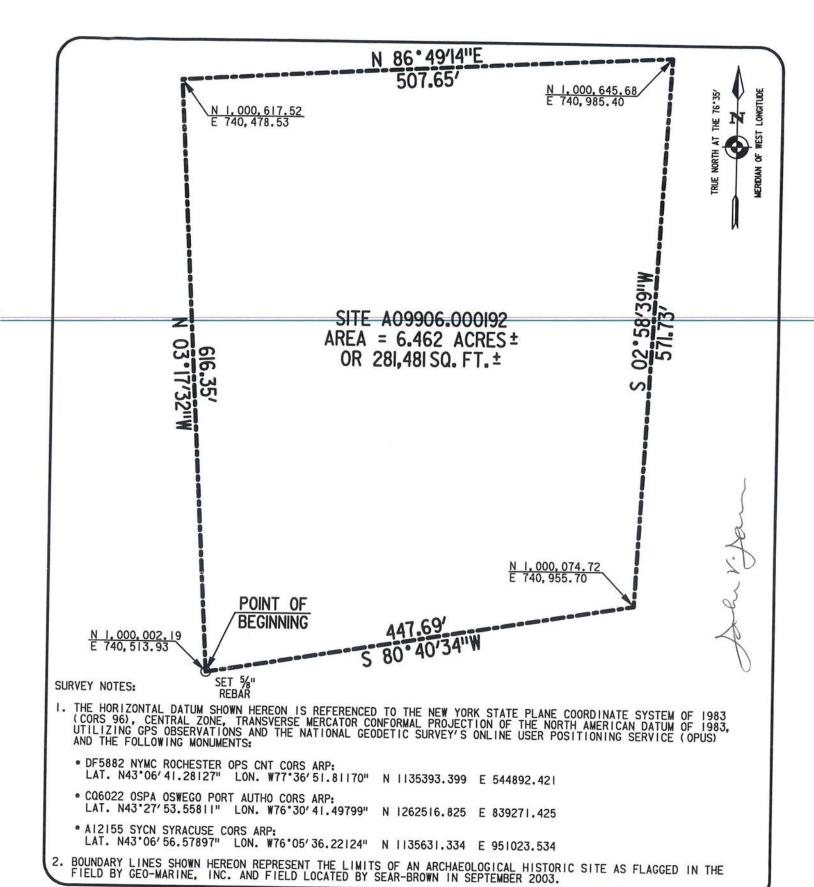
Beginning at a set 5/8" rebar having grid coordinates of N = 991,968.26; E = 740,483.38 of the New York State Plane Coordinate System of 1983 (Cors 96), Central Zone, transverse mercator conformal projection of the North American Datum of 1983; thence

- N 84°49'28" E (bearings are based on the grid meridian of said Central Zone), a distance of 301.00 feet to a point; thence
- 2. S 07°52'25" E, a distance of 340.73 feet to a point; thence
- 3. N 84°20'47" W, a distance of 292.13 feet to a point; thence
- 4. N 11°11'50" W, a distance of 287.05 feet to a point, said point being the Point or Place of Beginning.

Area: 91350.988 sq.feet 2.097 acres

Project Name: default
Description:
Horizontal Alignment Name: 16
Description: SITE A09906.000189
Style: MISC

	bejie. Mibe	STATION	NORTHING	EASTING
Element:	Linear POB (6080) PI (6083) Tangent Direction: Tangent Length:	0+00.00 3+01.00 N 84 ⁴⁹ '28" E 301.00	991968.26 991995.41	740483.38 740783.15
Element:	Linear PI (6083) PI (6082) Tangent Direction: Tangent Length:	3+01.00 6+41.73 S 7^52'25" E 340.73	991995.41 991657.90	740783.15 740829.83
Element:	Linear PI (6082) PI (6081) Tangent Direction: Tangent Length:	6+41.73 9+33.86 N 84^20'47" W 292.13	991657.90 991686.67	740829.83 740539.12
Element:	Linear PI (6081) POE (6080) Tangent Direction: Tangent Length:	9+33.86 12+20.91 N 11^11'50" W 287.05	991686.67 991968.26	740539.12 740483.38





INTENSIVE CULTURAL RESOURCES SURVEY SENECA ARMY DEPOT, TOWN OF ROMULUS SENECA COUNTY, NEW YORK

TITLE OF DRAWING
HISTORIC SITE NO. A09906.000192

1590602

All that tract or parcel of land containing 6.462 acres, more or less, situate on lands of now or formerly the Seneca Army Depot, in the Town of Romulus, County of Seneca, State of New York, as shown on a map entitled "Intensive Cultural Resources Survey – Historic Site No. A09906.000192", dated October 1, 2003 and having Drawing No. 1590602 6.192 and being more particularly bounded and described as follows:

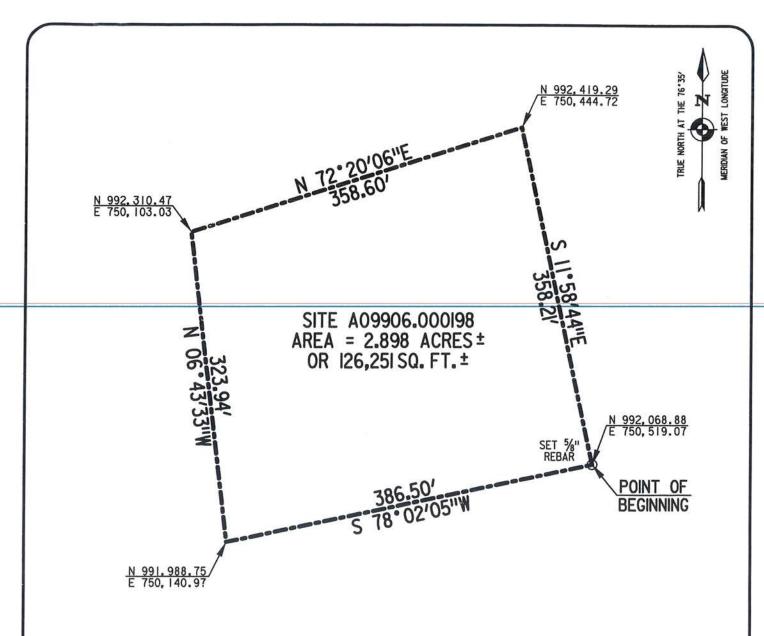
Beginning at a set 5/8" rebar having grid coordinates of N = 1,000,002.19; E = 740,513.93 of the New York State Plane Coordinate System of 1983 (Cors 96), Central Zone, transverse mercator conformal projection of the North American Datum of 1983; thence

- 1. N 03°17'32" W (bearings are based on the grid meridian of said Central Zone), a distance of 616.35 feet to a point; thence
- 2. N 86°49'14" E, a distance of 507.65 feet to a point; thence
- 3. S 02°58'39" W, a distance of 571.73 feet to a point; thence
- 4. S 80°40'34" W, a distance of 447.69 feet to a point, said point being the Point or Place of Beginning.

Project Name: default
Description:
Horizontal Alignment Name: 11
Description: SITE A09906.000192
Style: MISC

Area: 281481.476 sq.feet 6.462 acres

	beyre. Hibe		STATION	NORTHING	EASTING
Element:	Linear POB (6054) PI (6055) Tangent Direction: Tangent Length:	N	0+00.00 6+16.35 3^17'32" W 616.35	1000002.19 1000617.52	740513.93 740478.53
Element:	Linear PI (6055) PI (6056) Tangent Direction: Tangent Length:	N	6+16.35 11+23.99 86^49'14" E 507.65	1000617.52 1000645.68	740478.53 740985.40
Element:	Linear PI (6056) PI (6057) Tangent Direction: Tangent Length:	s	11+23.99 16+95.72 2^58'39" W 571.73	1000645.68 1000074.72	740985.40 740955.70
Element:	Linear PI (6057) POE (6054) Tangent Direction: Tangent Length:	S	16+95.72 21+43.41 80^40'34" W 447.69	1000074.72 1000002.19	740955.70 740513.93



SURVEY NOTES:

- I. THE HORIZONTAL DATUM SHOWN HEREON IS REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM OF 1983 (CORS 96), CENTRAL ZONE, TRANSVERSE MERCATOR CONFORMAL PROJECTION OF THE NORTH AMERICAN DATUM OF 1983, UTILIZING GPS OBSERVATIONS AND THE NATIONAL GEODETIC SURVEY'S ONLINE USER POSITIONING SERVICE (OPUS) AND THE FOLLOWING MONUMENTS:
 - DF5882 NYMC ROCHESTER OPS CNT CORS ARP: LAT. N43*06'41.28127" LON. W77*36'51.81170" N 1135393.399 E 544892.421
 - CQ6022 OSPA OSWEGO PORT AUTHO CORS ARP: LAT. N43°27′53.55811" LON. W76°30′41.49799" N 1262516.825 E 839271.425
 - A12155 SYCN SYRACUSE CORS ARP:
 LAT. N43°06′56.57897" LON. W76°05′36.22124" N 1135631.334 E 951023.534
- BOUNDARY LINES SHOWN HEREON REPRESENT THE LIMITS OF AN ARCHAEOLOGICAL HISTORIC SITE AS FLAGGED IN THE FIELD BY GEO-MARINE, INC. AND FIELD LOCATED BY SEAR-BROWN IN SEPTEMBER 2003.



THES LAW TO LINE LOWED BY SPECIFIC

PROJECT ENGNEER/ARCHITECT
PROJECT MANAGER
J. JAUN

S. SMITH

SCALE FRST ISSUE DATE

| = 100' 10/01/03



US Army Corps of Engineers New York District PROJECT

INTENSIVE CULTURAL RESOURCES SURVEY SENECA ARMY DEPOT, TOWN OF ROMULUS SENECA COUNTY, NEW YORK

TITLE OF DRAWING

HISTORIC SITE NO. A09906.000198

Let The

PROJECT NO.
1590602

All that tract or parcel of land containing 2.898 acres, more or less, situate on lands of now or formerly the Seneca Army Depot, in the Town of Romulus, County of Seneca, State of New York, as shown on a map entitled "Intensive Cultural Resources Survey – Historic Site No. A09906.000198", dated October 1, 2003 and having Drawing No. 1590602 6.198 and being more particularly bounded and described as follows:

Beginning at a set 5/8" rebar having grid coordinates of N = 992,068.88; E = 750,519.07 of the New York State Plane Coordinate System of 1983 (Cors 96), Central Zone, transverse mercator conformal projection of the North American Datum of 1983; thence

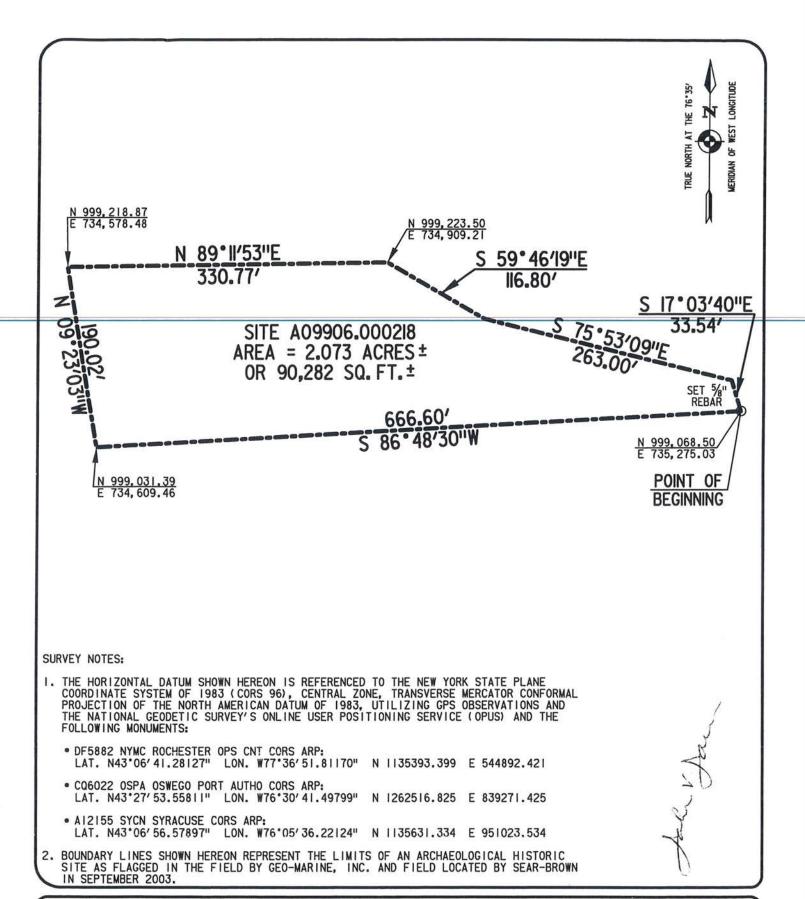
- 1. S 78°02'05" W (bearings are based on the grid meridian of said Central Zone), a distance of 386.50 feet to a point; thence
- 2. N 06°43'33" W, a distance of 323.94 feet to a point; thence
- 3. N 72°20'06" E, a distance of 358.60 feet to a point; thence
- 4. S 11°58'44" E, a distance of 358.21 feet to a point, said point being the Point or Place of Beginning.

Project Name: default
Description:
Horizontal Alignment Name: 22
Description: SITE A09906.000198
Style: MISC

Area: 126250.908 sq.feet

	Style: MISC		STATION	NORTHING	EASTING
Element:	Linear POB (6115) PI (6118) Tangent Direction: Tangent Length:	S	0+00.00 3+86.50 78^02'05" W 386.50	992068.88 991988.75	750519.07 750140.97
Element:	Linear PI (6118) PI (6117) Tangent Direction: Tangent Length:	N	3+86.50 7+10.44 6^43'33" W 323.94	991988.75 992310.47	750140.97 750103.03
Element:	PI (6117) PI (6116) Tangent Direction: Tangent Length:	N	7+10.44 10+69.04 72^20'06" E 358.60	992310.47 992419.29	750103.03 750444.72
Element:	Linear PI (6116) POE (6115) Tangent Direction: Tangent Length:	S	10+69.04 14+27.25 11^58'44" E 358.21	992419.29 992068.88	750444.72 750519.07

2.898 acres



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J. JAUN

DRAWN BY S. SMITH SCALE |" = 100' FRST ISSUE DATE 10/01/03



US Army Corps of Engineers **New York District** INTENSIVE CULTURAL RESOURCES SURVEY SENECA ARMY DEPOT, TOWN OF ROMULUS SENECA COUNTY, NEW YORK

HISTORIC SITE NO. A09906.000218

PROJECT NO. 1590602 DRAWING NO.

All that tract or parcel of land containing 2.073 acres, more or less, situate on lands of now or formerly the Seneca Army Depot, in the Town of Romulus, County of Seneca, State of New York, as shown on a map entitled "Intensive Cultural Resources Survey – Historic Site No. A09906.000218", dated October 1, 2003 and having Drawing No. 1590602 6.218 and being more particularly bounded and described as follows:

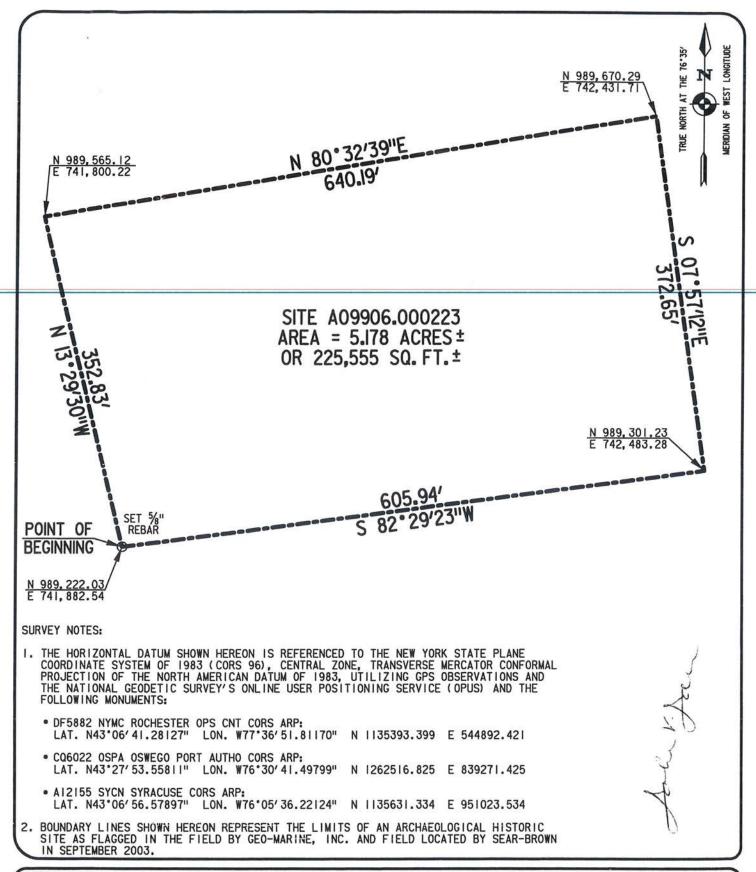
Beginning at a set 5/8" rebar having grid coordinates of N = 999,068.50; E = 735,275.03 of the New York State Plane Coordinate System of 1983 (Cors 96), Central Zone, transverse mercator conformal projection of the North American Datum of 1983; thence

- 1. S 86°48'30" W (bearings are based on the grid meridian of said Central Zone), a distance of 666.60 feet to a point; thence
- 2. N 09°23'03" W, a distance of 190.02 feet to a point; thence
- 3. N 89°11'53" E, a distance of 330.77 feet to a point; thence
- 4. S 59°46'19" E, a distance of 116.80 feet to a point; thence
- 5. S 75°53'09" E, a distance of 263.00 feet to a point; thence
- 6. S 17°03'40" E, a distance of 33.54 feet to a point, said point being the Point or Place of Beginning.

Area: 90281.835 sq.feet 2.073 acres

Project Name: default
Description:
Horizontal Alignment Name: 31
Description: SITE A09906.000218
Style: MISC

			STATION	NORTHING	EASTING
Element:		S	0+00.00 6+66.60 86^48'30" W 666.60	999068.50 999031.39	735275.03 734609.46
Element:	PI (PI (Tangent Dire Tangent I	N	6+66.60 8+56.62 9^23'03" W 190.02	999031.39 999218.87	734609.46 734578.48
Element:	Linear PI (PI (Tangent Dire Tangent I	N	8+56.62 11+87.39 89^11'53" E 330.77	999218.87 999223.50	734578.48 734909.21
Element:	Linear PI (PI (Tangent Dire Tangent L	S	11+87.39 13+04.19 59^46'19" E 116.80	999223.50 999164.69	734909.21 735010.13
Element:	Linear PI (PI (Tangent Dire Tangent L	S	13+04.19 15+67.19 75^53'09" E 263.00	999164.69 999100.56	735010.13 735265.19
Element:		S	15+67.19 16+00.72 17^03'40" E 33.54	999100.56 999068.50	735265.19 735275.03



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PROJECT ENGINEER/ARCHITECT J. JAUN

S. SMITH SCALE |" = 100' 10/01/03



US Army Corps of Engineers **New York District** INTENSIVE CULTURAL RESOURCES SURVEY SENECA ARMY DEPOT, TOWN OF ROMULUS SENECA COUNTY, NEW YORK

TITLE OF DRAWING

HISTORIC SITE NO. A09906.000223

PROJECT NO. 1590602

DESCRIPTION OF HISTORIC SITE NO. A09906.000223

All that tract or parcel of land containing 5.178 acres, more or less, situate on lands of now or formerly the Seneca Army Depot, in the Town of Romulus, County of Seneca, State of New York, as shown on a map entitled "Intensive Cultural Resources Survey – Historic Site No. A09906.000223", dated October 1, 2003 and having Drawing No. 1590602 6.223 and being more particularly bounded and described as follows:

Beginning at a set 5/8" rebar having grid coordinates of N = 989,222.03; E = 741,882.54 of the New York State Plane Coordinate System of 1983 (Cors 96), Central Zone, transverse mercator conformal projection of the North American Datum of 1983; thence

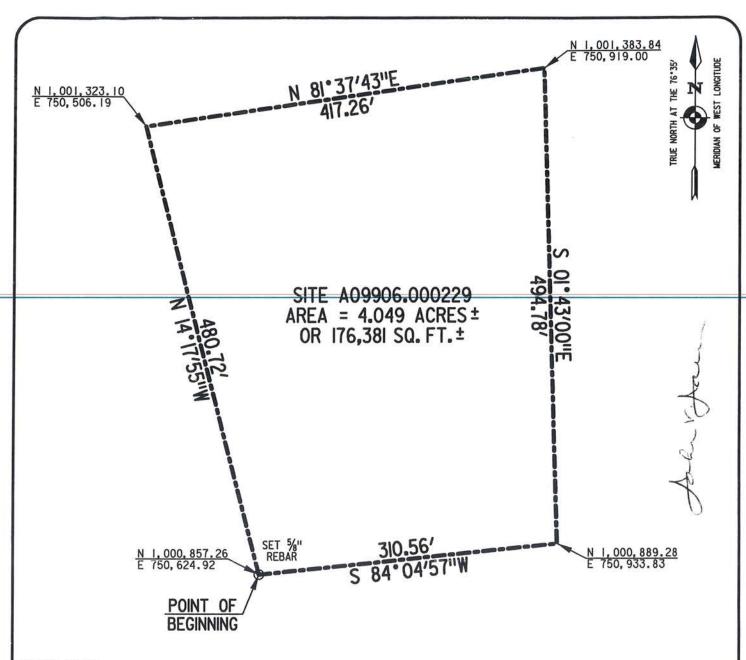
- 1. N 13°29'30" W (bearings are based on the grid meridian of said Central Zone), a distance of 352.83 feet to a point; thence
- 2. N 80°32'39" E, a distance of 640.19 feet to a point; thence
- 3. S 07°57'12" E, a distance of 372.65 feet to a point; thence
- 4. S 82°29'23" W, a distance of 605.94 feet to a point, said point being the Point or Place of Beginning.

M:1590602/D06.223

Area: 225554.999 sq.feet 5.178 acres

Project Name: default
Description:
Horizontal Alignment Name: 20
Description: SITE A09906.000223
Style: MISC

	beyre. Mibe	STATION	NORTHING	EASTING
Element:	Linear POB (6105) PI (6108) Tangent Direction: Tangent Length:	0+00.00 3+52.83 N 13^29'30" W 352.83	989222.03 989565.12	741882.54 741800.22
Element:	Linear PI (6108) PI (6107) Tangent Direction: Tangent Length:	3+52.83 9+93.02 N 80^32'39" E 640.19	989565.12 989670.29	741800.22 742431.71
Element:	PI (6107) PI (6106) Tangent Direction: Tangent Length:	9+93.02 13+65.67 S 7 ⁵⁷ '12" E 372.65	989670.29 989301.23	742431.71 742483.28
Element:	Linear PI (6106) POE (6105) Tangent Direction: Tangent Length:	13+65.67 19+71.60 S 82^29'23" W 605.94	989301.23 989222.03	742483.28 741882.54



SURVEY NOTES:

- I. THE HORIZONTAL DATUM SHOWN HEREON IS REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM OF 1983 (CORS 96), CENTRAL ZONE, TRANSVERSE MERCATOR CONFORMAL PROJECTION OF THE NORTH AMERICAN DATUM OF 1983, UTILIZING GPS OBSERVATIONS AND THE NATIONAL GEODETIC SURVEY'S ONLINE USER POSITIONING SERVICE (OPUS) AND THE FOLLOWING MONUMENTS:
 - DF5882 NYMC ROCHESTER OPS CNT CORS ARP: LAT. N43°06′41.28127" LON. W77°36′51.81170" N 1135393.399 E 544892.421
 - CQ6022 OSPA OSWEGO PORT AUTHO CORS ARP: LAT. N43°27'53.55811" LON. W76°30'41.49799" N 1262516.825 E 839271.425
 - A12155 SYCN SYRACUSE CORS ARP:
 LAT. N43*06'56.57897" LON. W76*05'36.22124" N 1135631.334 E 951023.534
- 2. BOUNDARY LINES SHOWN HEREON REPRESENT THE LIMITS OF AN ARCHAEOLOGICAL HISTORIC SITE AS FLAGGED IN THE FIELD BY GEO-MARINE, INC. AND FIELD LOCATED BY SEAR-BROWN IN SEPTEMBER 2003.



J. JAUN

S. SMITH SCALE |11 = 100 IO/OI/O3



US Army Corps of Engineers **New York District** PROJECT

INTENSIVE CULTURAL RESOURCES SURVEY SENECA ARMY DEPOT, TOWN OF ROMULUS SENECA COUNTY, NEW YORK

HISTORIC SITE NO. A09906.000229

PROJECT NO. 1590602

6.229

DESCRIPTION OF HISTORIC SITE NO. A09906.000229

All that tract or parcel of land containing 4.049 acres, more or less, situate on lands of now or formerly the Seneca Army Depot, in the Town of Romulus, County of Seneca, State of New York, as shown on a map entitled "Intensive Cultural Resources Survey – Historic Site No. A09906.000229", dated October 1, 2003 and having Drawing No. 1590602 6.229 and being more particularly bounded and described as follows:

Beginning at a set 5/8" rebar having grid coordinates of N = 1,000,857.26; E = 750,624.92 of the New York State Plane Coordinate System of 1983 (Cors 96), Central Zone, transverse mercator conformal projection of the North American Datum of 1983; thence

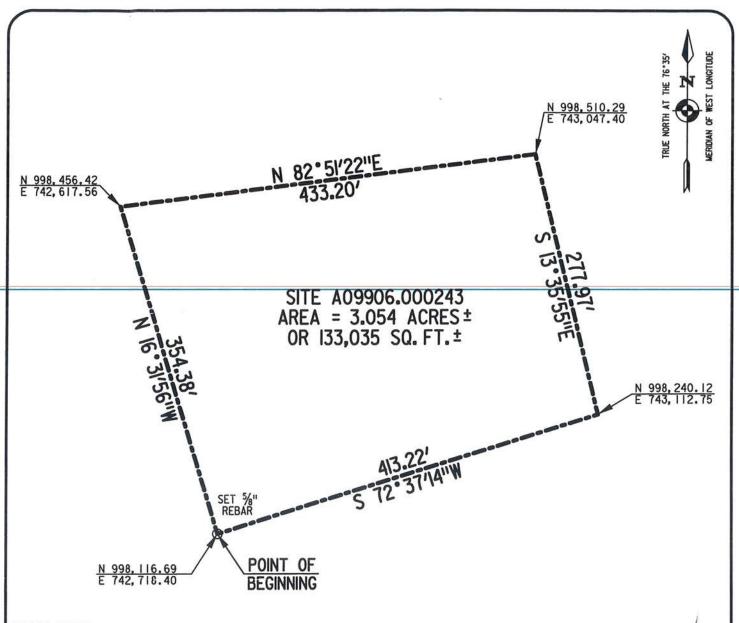
- 1. N 14°17'55" W (bearings are based on the grid meridian of said Central Zone), a distance of 480.72 feet to a point; thence
- 2. N 81°37'43" E, a distance of 417.26 feet to a point; thence
- 3. S 01°43'00" E, a distance of 494.78 feet to a point; thence
- 4. S 84°04'57" W, a distance of 310.56 feet to a point, said point being the Point or Place of Beginning.

M:1590602/D06.229

Project Name: default
Description:
Horizontal Alignment Name: 29
Description: SITE A09906.000229
Style: MISC

Area: 176380.734 sq.feet 4.049 acres

		STATION	NORTHING	EASTING
Element:	POB (6132) PI (6138)	0+00.00 4+80.72 N 14^17'55" W 480.72	1000857.26 1001323.10	750624.92 750506.19
Element:	Linear PI (6138) PI (6137) Tangent Direction: Tangent Length:	4+80.72 8+97.98 N 81^37'43" E 417.26	1001323.10 1001383.84	750506.19 750919.00
Element:	Linear PI (6137) PI (6133) Tangent Direction: Tangent Length:	8+97.98 13+92.77 S 1^43'00" E 494.78	1001383.84 1000889.28	750919.00 750933.83
Element:	Linear PI (6133) POE (6132) Tangent Direction: Tangent Length:	13+92.77 17+03.33 S 84^04'57" W 310.56	1000889.28 1000857.26	750933.83 750624.92



SURVEY NOTES:

- I. THE HORIZONTAL DATUM SHOWN HEREON IS REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM OF 1983 (CORS 96), CENTRAL ZONE, TRANSVERSE MERCATOR CONFORMAL PROJECTION OF THE NORTH AMERICAN DATUM OF 1983, UTILIZING GPS OBSERVATIONS AND THE NATIONAL GEODETIC SURVEY'S ONLINE USER POSITIONING SERVICE (OPUS) AND THE FOLLOWING MONUMENTS:
 - DF5882 NYMC ROCHESTER OPS CNT CORS ARP: LAT. N43°06'41.28127" LON. W77°36'51.81170" N 1135393.399 E 544892.421
 - CQ6022 OSPA OSWEGO PORT AUTHO CORS ARP:
 LAT. N43*27'53.55811" LON. W76*30'41.49799" N 1262516.825 E 839271.425
 - A12155 SYCN SYRACUSE CORS ARP:
 LAT. N43°06′56.57897" LON. W76°05′36.22124" N 1135631.334 E 951023.534
- 2. BOUNDARY LINES SHOWN HEREON REPRESENT THE LIMITS OF AN ARCHAEOLOGICAL HISTORIC SITE AS FLAGGED IN THE FIELD BY GEO-MARINE, INC. AND FIELD LOCATED BY SEAR-BROWN IN SEPTEMBER 2003.



NECT ENGINEER/ARCHITEC

J. JAUN

S. SMITH

SCALE

|" = 100'

FRST ISSUE DATE
1 10/01/03



US Army Corps of Engineers New York District INTENSIVE CULTURAL RESOURCES SURVEY SENECA ARMY DEPOT, TOWN OF ROMULUS SENECA COUNTY, NEW YORK

TITLE OF DRAWING

HISTORIC SITE NO. A09906.000243

Late Han

PROJECT NO.
1590602
DRAWING NO.

6.243

DESCRIPTION OF HISTORIC SITE NO. A09906.000243

All that tract or parcel of land containing 3.054 acres, more or less, situate on lands of now or formerly the Seneca Army Depot, in the Town of Romulus, County of Seneca, State of New York, as shown on a map entitled "Intensive Cultural Resources Survey – Historic Site No. A09906.000243", dated October 1, 2003 and having Drawing No. 1590602 6.243 and being more particularly bounded and described as follows:

Beginning at a set 5/8" rebar having grid coordinates of N = 998,116.69; E = 742,718.40 of the New York State Plane Coordinate System of 1983 (Cors 96), Central Zone, transverse mercator conformal projection of the North American Datum of 1983; thence

- 1. N 16°31'56" W (bearings are based on the grid meridian of said Central Zone), a distance of 354.38 feet to a point; thence
- 2. N 82°51'22" E, a distance of 433.20 feet to a point; thence
- 3. S 13°35'55" E, a distance of 277.97 feet to a point; thence
- 4. S 72°37'14" W, a distance of 413.22 feet to a point, said point being the Point or Place of Beginning.

M:1590602/D06.243

Area: 133035.297 sq.feet 3.054 acres

Project Name: default
Description:
Horizontal Alignment Name: 13
Description: SITE A09906.000243
Style: MISC

		STATION	NORTHING	EASTING
Element:	Linear POB (6065) PI (6064) Tangent Direction: Tangent Length:	-7+87.58 -4+33.20 N 16^31'56" W 354.38	998116.69 998456.42	742718.40 742617.56
Element:	PI (6064) PI (6063) Tangent Direction: Tangent Length:	-4+33.20 0+00.00 N 82 ⁵¹ '22" E 433.20	998456.42 998510.29	742617.56 743047.40
Element:	PI (6063) PI (6066) Tangent Direction: Tangent Length:	0+00.00 2+77.97 S 13^35'55" E 277.97	998510.29 998240.12	743047.40 743112.75
Element:	Linear PI (6066) POE (6065) Tangent Direction: Tangent Length:	2+77.97 6+91.18 S 72^37'14" W 413.22	998240.12 998116.69	743112.75 742718.40

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 6850

NIIN: 001817940

Manufacturer's CAGE: 27978

Part No. Indicator: A

Part Number/Trade Name: ETHYLENE GLYCOL, INHIBITED

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN. ------

General Information

Item Name: ANTIFREEZE

Manufacturer's Name: MALTER INTERNATIONAL BULK CHEMICAL DIVISION

Manufacturer's Street: 80 FIRST STREET

Manufacturer's P. O. Box: N/K

Manufacturer's City: GRETNA

Manufacturer's State: LA

Manufacturer's Country: US

Manufacturer's Zip Code: 70053

Manufacturer's Emerg Ph #: 504-362-3232/800-424-9300(CHEMTREC)

Manufacturer's Info Ph #: 504-362-3232

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 006

Tot Safety Entries This Stk#: 012

Status: SE

Date MSDS Prepared: 01DEC89

Safety Data Review Date: 20MAY92

Supply Item Manager: CX

MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BHCMR

Specification Number: MIL-A-46153

Spec Type, Grade, Class: REV B

Hazard Characteristic Code: N1

Unit Of Issue: DR

Unit Of Issue Container Qty: 55.0 GAL

Type Of Container: DRUM Net Unit Weight: 517.5 LBS

```
NRC/State License Number:
 Net Explosive Weight:
 Net Propellant Weight-Ammo:
 Coast Guard Ammunition Code:
 ______
                  Ingredients/Identity Information
 Proprietary: NO
 Ingredient: ETHYLENE GLYCOL (SARA III) *
 Ingredient Sequence Number: 01
Percent: >95
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: KW2975000
CAS Number: 107-21-1 *
OSHA PEL: C 50 PPM *
ACGIH TLV: C 50 PPM, VAPOR; 9192
Other Recommended Limit: N/K
-----
Proprietary: NO
Ingredient: WATER
Ingredient Sequence Number: 02
Percent: 4.0
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: ZC0110000
CAS Number: 7732-18-5
OSHA PEL: N/R
ACGIH TLV: N/R
Other Recommended Limit: N/R
-----
Proprietary: NO
Ingredient: SODIUM NITRATE (RUST INHIBITOR)
Ingredient Sequence Number: 03
Percent: <0.2
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: WC5600000
CAS Number: 7631-99-4
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: N/K
-----
Proprietary: NO
Ingredient: SODIUM TETRABORATE, DECAHYDRATE *
Ingredient Sequence Number: 04
Percent: <0.5
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: VZ2275000
CAS Number: 1303-96-4 *
OSHA PEL: 10 MG/M3 *
ACGIH TLV: 5 MG/M3; 9192 *
Other Recommended Limit: N/K
-----
```

Proprietary: NO

Ingredient: SODIUM METASILICATE (RUST INHIBITOR)

```
Ingredient Sequence Number: 05
 Percent: <0.2
 Ingredient Action Code:
 Ingredient Focal Point: D
NIOSH (RTECS) Number: 1002257SM
CAS Number: 10213-79-3
OSHA PEL: 15MG/M*3 TOTAL DUST
ACGIH TLV: 10MG/M*3 TOTAL DUST
Other Recommended Limit: N/K
Proprietary: NO
Ingredient: SODIUM ORTHOPHOSPHATE (RUST INHIBITOR)
Ingredient Sequence Number: 06
Percent: <0.3
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 100439650
CAS Number: 7801-54-9
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: N/K
-----
Proprietary: NO
Ingredient: SODIUM MOLYBDATE (RUST INHIBITOR)
Ingredient Sequence Number: 07
Percent: <0.3
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: QA5075000
CAS Number: 7631-95-0
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: N/K
-----
Proprietary: NO
Ingredient: SODIUM TOLYLTRIAZOLE (RUST INHIBITOR)
Ingredient Sequence Number: 08
Percent: <0.2
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1003731ST
CAS Number: 64665-57-2
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: N/K
-----
Proprietary: NO
Ingredient: SODIUM MERCAPTOBENZOTHIAZOLE (RUST INHIBITOR)
Ingredient Sequence Number: 09
Percent: <0.3
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1002804SM
CAS Number: UNKNOWN
OSHA PEL: N/K
ACGIH TLV: N/K
```

Other Recommended Limit: N/K

```
Proprietary: NO
Ingredient: NON-IONIC SURFACTANT
Ingredient Sequence Number: 10
Percent: <0.03
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1000978NS
CAS Number: UNKNOWN
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: N/K
Proprietary: NO
Ingredient: STABILIZER
Ingredient Sequence Number: 11
Percent: <0.1
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1000340ST
CAS Number: UNKNOWN
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: N/K
Proprietary: NO
Ingredient: DYES
Ingredient Sequence Number: 12
Percent: <0.01
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1000093DY
CAS Number: UNKNOWN
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: N/K
Physical/Chemical Characteristics
Appearance And Odor: SLIGHTLY HAZY, FLUORESCENT GREEN LIQUID, SLIGHT
GLYCOL ODOR
Boiling Point: 330F, 166C
Melting Point: N/R
Vapor Pressure (MM Hg/70 F): 18
Vapor Density (Air=1): N/K
Specific Gravity: 1.125-1.126
Decomposition Temperature: N/K
Evaporation Rate And Ref: UNKNOWN
Solubility In Water: COMPLETE
Percent Volatiles By Volume: N/K
Viscosity: N/K
pH: 10-11
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY): UNKNOWN
```

Autoignition Temperature: 775F

Fire and Explosion Hazard Data

Flash Point: 260F,127C

Flash Point Method: COC

Lower Explosive Limit: N/K

Upper Explosive Limit: N/K

Extinguishing Media: WATER SPRAY, CO2, FOAM/DRY CHEMICAL. WATER SPRAY MAY BE USED TO KEEP FIRE EXPOSED CONTAINERS COOL & FLUSH SPILLS AWAY.

Special Fire Fighting Proc: WEAR FULL PROTECTIVE CLOTHING AND NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE MODE.

Unusual Fire And Expl Hazrds: VAPORS MAY TRAVEL ALONG GROUND TO IGNITION SOURCE AND FLASH BACK.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): EXCESSIVE HEAT, FLAME, IGNITION SOURCES

Materials To Avoid: STRONG OXIDIZERS

Hazardous Decomp Products: MAY FORM CARBON MONOXIDE.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): N/R

Health Hazard Data

nearth hazard bata

LD50-LC50 Mixture: TLV 50 PPM CEILING (VAPORS)

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: NO

Health Haz Acute And Chronic: ACUTE-INHALE: VAPOR/MIST MAY CAUSE RESPIRATORY IRRITATION & MAY RESULT IN UNCONSCIOUSNESS.ORAL: WILL CAUSE ACUTE POISONING RESULTING IN SEVERE ABDOMINAL DISTURBANCES, CNS DEPRESSION & POSSIBLE RESPIRATORY AND/OR RENAL FAILURE.EYE/SKIN: WILL RESULT IN TEMPORARY IRRITATION.CHRONIC-NONE KNOWN.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: N/R

Signs/Symptoms of Overexp: VAPOR/MIST MAY CAUSE RESPIRATORY IRRITATION & MAY RESULT IN UNCONSCIOUSNESS. ORALLY WILL CAUSE ACUTE POISONING RESULTING IN SEVERE ABDOMINAL DISTURBANCES, CNS DEPRESSION & POSSIBLE RESPIRATORY AND/OR RENAL FAILURE. EYE/SKIN CONTACT WILL RESULT IN TEMPORARY IRRITATION. Med Cond Aggravated By Exp: PERSONS WITH PRE-EXISTING LIVER, KIDNEY OR RESPIRATORY DISORDERS MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THE SUBSTANCE.

Emergency/First Aid Proc: CONSULT A PHYSICIAN.EYE:IMMEDIATELY FLUSH WITH WATER FOR 15 MINUTES, HOLDING EYELIDS OPEN.SKIN:WASH WITH SOAP & WATER. INHALED:REMOVE TO FRESH AIR.PROVIDE CPR/OXYGEN IF NEEDED.ORAL:IF CONSCIOUS, INDUCE VOMITING.CALL A PHYSICIAN/POISON CONTROL CENTER IMMEDIATELY.NEVER GIVE FLUIDS OR INDUCE VOMITING IF PATIENT IS UNCONSCIOUS OR HAVING CONVULSIONS!

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: WEAR PROTECTIVE EQUIPMENT.ELIMINATE SOURCES OF IGNITION.VENTILATE THE AREA.STOP LEAK IF POSSIBLE.CONTAIN THE SPILL.PICK

UP LARGE SPILL WITH NON-SPARKING TOOLS; SMALL SPILLS/RESIDUE WITH ABSORBENT MATERIAL.PLACE IN NON-LEAK CONTAINERS.CONTAIN RUN-OFF.

Neutralizing Agent: N/R

Waste Disposal Method: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

Precautions-Handling/Storing: STORAGE-STORE IN COOL, WELL-VENTILATED AREA AWAY FROM INCOMPATIBLES.AVOID CONTACT WITH FOOD AND FOODSTUFF.

Other Precautions: EMPTY CONTAINERS MAY BE UNSAFE DUE TO PRESENCE OF RESIDUES. WASH THOROUGHLY AFTER HANDLING. AVOID BREATHING VAPORS OR MISTS. DO NOT GET IN EYES, ON SKIN OR ON CLOTHING.

Control Measures

Respiratory Protection: IF ENGINEERING CONTROLS ARE INADEQUATE TO CONTROL VAPOR CONCENTRATIONS TO AN ACCEPTABLE LEVEL, A NIOSH-APPROVED ORGANIC VAPOR RESPIRATOR SHOULD BE WORN. A PROGRAM SHOULD BE INSTITUTED TO ASSURE COMPLIANCE WITH OSHA STANDARD 29 CFR 1910.134.

Ventilation: LOCAL EXHAUST

Protective Gloves: RUBBER GLOVES

Eye Protection: CHEMICAL GOGGLES OR FULL FACE SHIELD

Other Protective Equipment: EYE WASH STATION, QUICK DRENCH SHOWER AND IMPERVIOUS CLOTHING

Work Hygienic Practices: OBSERVE GOOD PERSONAL HYGIENE PRACTICES AND RECOMMENDED PROCEDURES. DO NOT WEAR CONTAMINATED CLOTHING OR FOOTWEAR. Suppl. Safety & Health Data:

Transportation Data

Transportation Action Code:

Transportation Focal Point: D

Trans Data Review Date: 92141

DOT PSN Code: ZZZ

DOT Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION

DOT Class: N/R DOT Label: N/R

Limited Quantity: N/R

DOT Mode Indicator:

Identification Number: N/R

Reportable Qty - Trans File: NO

DOT/DoD Exemption Number:

IMO PSN Code: ZZZ

IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION

IMO Regulations Page Number: N/R

IMO UN Number: N/R

IMO UN Class: N/R

IMO Subsidiary Risk Label: N/R

IATA PSN Code: ZZZ

IATA UN ID Number: N/R

IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION

IATA UN Class: N/R

IATA Subsidiary Risk Class: N/R

IATA Label: N/R

AFR 71-4 PSN Code: ZZZ

AFR 71-4 Prop. Shipping Name: NOT REGULATED FOR THIS MODE OF

TRANSPORTATION

AFR 71-4 Class: N/R

AFR 71-4 Label: N/R

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AFR 71-4 ID Number: N/R
AF MMAC Code:
Tech Entry NOS Shipping Name:
Additional Trans Data:
______
                           Disposal Data
______
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
Label Required: YES
Date of Technical Review: 20MAY92
Label Date: UNDATED
Manufacturer's Label No.: UNKNOWN
Label Status: D
Common Name of Product: ETHYLENE GLYCOL, INHIBITED
Chronic Hazard: UNK
Signal Word: WARNING!
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate: X
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight: X
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight: X
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None: X
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: ACUTE-INHALE: VAPOR/MIST MAY CAUSE RESPIRATORY
IRRITATION & MAY RESULT IN UNCONSCIOUSNESS.ORAL: WILL CAUSE ACUTE POISONING
RESULTING IN SEVERE ABDOMINAL DISTURBANCES, CNS DEPRESSION & POSSIBLE
```

RESPIRATORY AND/OR RENAL FAILURE.EYE/SKIN: WILL RESULT IN TEMPORARY

IRRITATION.CHRONIC-NONE KNOWN.STORAGE-STORE IN COOL, WELL-VENTILATED AREA AWAY FROM INCOMPATIBLES.AVOID CONTACT WITH FOODSTUFF.FIRST AID-CONSULT A PHYSICIAN.EYE:IMMEDIATELY FLUSH WITH WATER FOR 15 MINUTES, HOLDING EYELIDS OPEN.SKIN:WASH WITH SOAP & WATER.INHALED:REMOVE TO FRESH AIR.PROVIDE CPR/OXYGEN IF NEEDED.ORAL:IF CONSCIOUS, INDUCE VOMITING.CALL A PHYSICIAN/POISON CONTROL CENTER AT ONCE.

Protect Eye: X Protect Skin: X

Protect Respiratory: X

Mfg's Name From Label: MALTER INTERNATIONAL BULK CHEMICAL DIVISION

Mfg's Street From Label: 80 FIRST STREET

Mfg's P.O. Box From Label: N/K

Mfg's City From Label: GRETNA

Mfg's State From Label: LA

Mfg's Zip Code From Label: 70053

Mfg's Country From Label: US

Emergency Ph. No. From Label: 504-362-3232/800-424-9300(CHEMTREC)

Year Procured:

DOD Hazardous Materials Information System DOD 6050.5-L AS OF November 1992

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AS OF November 1992
FSC: 6840
NIIN: 012103392
Manufacturer's CAGE: 21626
Part No. Indicator: A
Part Number/Trade Name: DURSBAN (R) L.O. INSECTICIDE
Nuclear Water Data
This is not a Nuclear Water Chemical NIIN.
General Information
Item Name: INSECTICIDE, DURSBAN
Manufacturer's Name: DOWELANCO
Manufacturer's Street: 3901 W 86TH ST
Manufacturer's P. O. Box:
Manufacturer's City: INDIANAPOLIS
Manufacturer's State: IN
Manufacturer's Country: US
Manufacturer's Zip Code: 46268-1702
Manufacturer's Emerg Ph #: 517-636-4400
Manufacturer's Info Ph #: 517-636-4400
Distributor/Vendor # 1:
Distributor/Vendor # 1 Cage: 64184
Distributor/Vendor # 2:
Distributor/Vendor # 2 Cage:
Distributor/Vendor # 3:
Distributor/Vendor # 3 Cage:
Distributor/Vendor # 4:
Distributor/Vendor # 4 Cage:
Safety Data Action Code:
Safety Focal Point: D
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 003
Status: SE
Date MSDS Prepared: 27JUN90
Safety Data Review Date: 15FEB91
Supply Item Manager: CX
MSDS Preparer's Name:
Preparer's Company:
Preparer's St Or P. O. Box:
Preparer's City:
Preparer's State:
Preparer's Zip Code:
Other MSDS Number:
MSDS Serial Number: BJNZN
Specification Number: N/K
Spec Type, Grade, Class: N/K
                                      mL= (001) (40) = 104 Liter
1)=
Hazard Characteristic Code: F4
Unit Of Issue: BX
Unit Of Issue Container Qty: 12 X 40 ML
      (1.16) (7.23) (8.3) = (69.6 165) (.415) = (28.89165)
Type Of Container: BOX
Net Unit Weight:
                                             11 = 1.057 Gt
27.36 28.91 Qt = 7.23 Ge/
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NRC/State License Number:
Net Explosive Weight:
Net Propellant Weight-Ammo:
Coast Guard Ammunition Code:
______
                 Ingredients/Identity Information
______
Proprietary: NO
Ingredient: CHLORPYRIFOS (SARA III)
Ingredient Sequence Number: 01
Percent: 41.5
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: TF6300000
CAS Number: 2921-88-2
OSHA PEL: S, 0.2 MG/M3
ACGIH TLV: S, 0.2 MG/M3; 9192
Other Recommended Limit: NONE SPECIFIED
-----
Proprietary: NO
Ingredient: NAPHTHA, LIGHT AROMATIC (1,2,4-TRIMETHYLBENZENE, CAS#95-63-6, IS
A COMPONENT OF XYLENE-RANGE AROMATIC SOLVENT).
Ingredient Sequence Number: 02
Percent: 58.5
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1003693SN
CAS Number: 64742-95-6
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED
-----
Proprietary: NO
Ingredient: PROPRIETARY INGREDIENTS-EMULSIFIER
Ingredient Sequence Number: 03
Percent: N/K
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1004255PI
CAS Number: UNKNOWN
OSHA PEL: UNKNOWN
ACGIH TLV: UNKNOWN
Other Recommended Limit: NONE SPECIFIED
Physical/Chemical Characteristics
Appearance And Odor: CLEAR LIQUID, SOLVENT-TYPE ODOR
Boiling Point: 290F,143C
Melting Point: UNKNOWN
Vapor Pressure (MM Hg/70 F): <10
Vapor Density (Air=1): UNKNOWN
Specific Gravity: 1.16
Decomposition Temperature: >320F,>160C
Evaporation Rate And Ref: UNKNOWN
Solubility In Water: EMULSIFIABLE
Percent Volatiles By Volume: N/K
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Viscosity:

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pH: N/R
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY): UNKNOWN
Autoignition Temperature: N/K
```

Fire and Explosion Hazard Data

Flash Point: 122F,50C Flash Point Method: TCC Lower Explosive Limit: 1 Upper Explosive Limit: 6

Extinguishing Media: CARBON DIOXIDE, FOAM, OR DRY CHEMICAL.

Special Fire Fighting Proc: FOAM FIRE EXTINGUISHING SYSTEM IS PREFERRED BECAUSE UNCONTROLLED WATER CAN SPREAD CONTAMINATION.USE POSITIVE-PRESSURE SELF-CONTAINED BREATHING APPARATUS.

Unusual Fire And Expl Hazrds: TOXIC IRRITATING GASES MAY BE FORMED IN THE EVENT OF A FIRE.RAPID DECOMPOSITION ABOVE 320-392F.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): AVOID HEATING ABOVE 122F.CHLORPYRIFOS UNDERGOES EXOTHERMIC DECOMPOSITION AT ABOUT 266F WHICH CAN LEAD TO VIOLENT DECOMP.

Materials To Avoid: NONE KNOWN

Hazardous Decomp Products: HYDROGEN CHLORIDE, ETHYL SULFIDE, DIETHYL

SULFIDE AND NITROGEN OXIDES

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): N/R

Health Hazard Data

LD50-LC50 Mixture: LD50(ORAL RAT), MALE 599, FEM 834 MG/KG

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: ACUTE-EYE:MAY CAUSE MODERATE IRRITATION & CORNEAL INJURY.SKIN:PROLONGED CONTACT MAY CAUSE IRRITATION.INHALATION:MAY CAUSE IRRITATION,INCREASED BODY HEAT & CNS EFFECTS.INGESTION:TOXICITY IS LOW.LARGE AMOUNT CAN CAUSE INJURY.IF ASPIRATED, MAY CAUSE LUNG DAMAGE. CHRONIC-NOT GIVEN.

Carcinogenicity - NTP: NO Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: ACTIVE INGREDIENT DID NOT CAUSE CANCER IN LONG-TERM ANIMAL STUDIES.

Signs/Symptoms Of Overexp: MAY CAUSE EYE & SKIN IRRITATION.INHALATION IN ORDER OF INCREASING CONCENTRATION MAY CAUSE EYE & UPPER RESPIRATORY TRACT IRRITATION, FEELING OF INCREASED BODY HEAT, CNS EFFECTS SUCH AS HEADACHE, DIZZINESS, INCOORDINATION, DROWSINESS, UNCONSCIOUSNESS, MUSCLE TWITCHING, TREMORS, NAUSEA, ABDOMINAL CRAMPS, DIARRHEA, BLURRED VISION... Med Cond Aggravated By Exp: NONE SPECIFIED BY MANUFACTURER.
Emergency/First Aid Proc: EYES:IRRIGATE WITH FLOWING WATER IMMEDIATELY &

Emergency/First Aid Proc: EYES:IRRIGATE WITH FLOWING WATER IMMEDIATELY & CONTINUOUSLY FOR 15 MIN.CONSULT MEDICAL PERSONNEL.SKIN:WASH OFF IN FLOWING WATER OR SHOWER.INGESTION:DON'T INDUCE VOMITING.CALL A PHYSICIAN.

INHALATION: REMOVE TO FRESH AIR.GIVE CPR/OXYGEN IF NEEDED. CALL A PHYSICIAN.

______ Precautions for Safe Handling and Use

______ Steps If Matl Released/Spill: ABSORB SPILLS WITH ABSORBENT MATERIAL SUCH AS HAZORB, ZORBALL, OR DIRT. THOROUGHLY WASH BODY AREAS WHICH COME INTO CONTACT WITH THIS PRODUCT. CONTAIN SPILLS TO KEEP OUT OF SEWERS. FOR LARGE SPILLS, CONSULT MANUFACTURER.

Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.

Waste Disposal Method: DO NOT CONTAMINATE FOOD, FEED OR WATER BY STORAGE OR DISPOSAL. PESTICIDE WASTES ARE TOXIC. IMPROPER DISPOSAL OF EXCESS PESTICIDE, SPRAY MIXTURE OR RINSATE IS A VIOLATION OF FEDERAL LAW. DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE & LOCAL REGULATIONS. Precautions-Handling/Storing: SEE LABEL.KEEP OUT OF REACH OF CHILDREN.DO NOT SWALLOW.DO NOT GET IN EYES OR SKIN. AVOID BREATHING MIST OR VAPORS. Other Precautions: KEEP AWAY FROM HEAT AND OPEN FLAME. HANDLE CONCENTRATE IN VENTILATED AREA. WASH THOROUGHLY AFTER HANDLING. CONSIDER MONITORING BLOOD

CHOLINESTERASE LEVELS.

Control Measures

-----Respiratory Protection: USE AN APPROVED AIR-PURIFYING RESPIRATOR. FOR EMERGENCY AND OTHER CONDITIONS WHERE THE EXPOSURE GUIDE LINE MAY BE GREATLY EXCEEDED, USE AN APPROVED POSITIVE-PRESSURE SCBA OR POSITIVE-PRESSURE AIRLINE WITH SELF-CONTAINED AIR SUPPLY.

Ventilation: GENERAL AND/OR LOCAL EXHAUST

Protective Gloves: PVA

Eye Protection: CHEMICAL GOGGLES/FULL-FACE RESPIRATOR Other Protective Equipment: EYE WASH STATION AND SHOWER.

Work Hygienic Practices: WASH THOROUGHLY AFTER HANDLING.DISCARD

CONTAMINATED LEATHER ITEMS.

Suppl. Safety & Health Data: NOTE TO PHYSICIAN: THE DECISION OF WHETHER TO INDUCE VOMITING OR NOT SHOULD BE MADE BY AN ATTENDING PHYSICIAN. IF LAVAGE IS PERFORMED.SUGGEST ENDOTRACHEAL AND/OR ESOPHAGEAL CONTROL.DANGER FROM LUNG ASPIRATION MUST BE WEIGHED AGAINST TOXICITY WHEN CONSIDERING EMPTYING THE STOMACH. ATROPINE IV IS THE ANTIDOTE OF CHOICE. ______

Transportation Data

Transportation Action Code:

Transportation Focal Point: D Trans Data Review Date: 91046

DOT PSN Code: GJB

DOT Proper Shipping Name: FLAMMABLE LIQUID, POISONOUS, N.O.S.

DOT Class: FLAMMABLE LIQUID

DOT Label: FLAMMABLE LIQUID AND POISON

Limited Quantity: DOT Mode Indicator:

Identification Number: UN1992

Reportable Qty - Trans File:

DOT/DoD Exemption Number:

IMO PSN Code: HJC

IMO Proper Shipping Name: FLAMMABLE LIQUIDS, TOXIC, N.O.S.

IMO Regulations Page Number: SEE 3232

IMO UN Number: 1992

IMO UN Class: 3.2

IMO Subsidiary Risk Label: POISON

IATA PSN Code: MCP

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IATA UN ID Number: 1992
IATA Proper Shipping Name: FLAMMABLE LIQUIDS, POISONOUS, N.O.S.
IATA UN Class: 3
IATA Subsidiary Risk Class: 6.1
IATA Label: FLAMMABLE LIQUID
AFR 71-4 PSN Code: ELD
AFR 71-4 Prop. Shipping Name: FLAMMABLE LIQUID, POISONOUS N.O.S.
AFR 71-4 Class: FLAMMABLE LIQUID
AFR 71-4 Label: FLAMMABLE LIQ & POISON
AFR 71-4 ID Number: UN1992
AF MMAC Code:
Tech Entry NOS Shipping Name: CHLORPYRIFOS (ACTIVE INGREDIENT OF
INSECTICIDE) - XYLENE
Additional Trans Data:
Disposal Data
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
Label Required: NO *
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: X *
Common Name of Product: LABEL COVERED UNDER EPA REGS - HAZCOM LABEL NOT
AUTHORIZED *
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
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Fire Hazard-Slight: Fire Hazard-Moderate: Fire Hazard-Severe: Reactivity Hazard-None: Reactivity Hazard-Slight: Reactivity Hazard-Moderate: Reactivity Hazard-Severe: Special Hazard Precautions: Protect Eye: Protect Skin: Protect Respiratory: Mfg's Name From Label: Mfg's Street From Label: Mfg's P.O. Box From Label: Mfg's City From Label: Mfg's State From Label: Mfg's Zip Code From Label:

Mfg's Country From Label: Emergency Ph. No. From Label: Year Procured:

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 6850 NIIN: 001817933 Manufacturer's CAGE: 4N760 Part No. Indicator: A

Part Number/Trade Name: ANTIFREEZE, ETHYLENE GLYCOT

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: ANTIFREEZE

Manufacturer's Name: CSD INC.

Manufacturer's Street: 5 HACKBERRY LANE

Manufacturer's P. O. Box: 687

Manufacturer's City: CONROE Manufacturer's State: TX Manufacturer's Country: US

Manufacturer's Zip Code: 77305

Manufacturer's Emerg Ph #: 409-756-1065 Manufacturer's Info Ph #: 409-756-1065

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 007

Tot Safety Entries This Stk#: 010

Status: SE

Date MSDS Prepared: 01AUG88

Safety Data Review Date: 11JUN92

Supply Item Manager: CX MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City: Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BMXFY Specification Number: N/R

Spec Type, Grade, Class: N/R

Hazard Characteristic Code: N1

Unit Of Issue: GL

Unit Of Issue Container Qty: 5 GAL

Type Of Container: CAN Net Unit Weight: 46.3 LBS

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NRC/State License Number: N/R
Net Explosive Weight: N/R
Net Propellant Weight-Ammo: N/R
Coast Guard Ammunition Code: N/R
-----
                Ingredients/Identity Information
Proprietary: NO
Ingredient: ETHYLENE GLYCOL (SARA III)
Ingredient Sequence Number: 01
Percent: 90-95%
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: KW2975000
CAS Number: 107-21-1
OSHA PEL: C 50 PPM
ACGIH TLV: C 50 PPM, VAPOR; 9192
Other Recommended Limit: NONE SPECIFIED
-----
Proprietary: NO
Ingredient: INHIBITORS & WATER
Ingredient Sequence Number: 02
Percent: 5-10%
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: ZC0110000
CAS Number: 7732-18-5
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED
_____
               Physical/Chemical Characteristics
_____
Appearance And Odor: BLUE-GREEN WITH MILD ODOR.
Boiling Point: 300F,149C
Melting Point: OF,-18C
Vapor Pressure (MM Hg/70 F): 0.05
Vapor Density (Air=1): 2.14
Specific Gravity: 1.110-1.145
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: 0.0002
Solubility In Water: 100%
Percent Volatiles By Volume: NIL
Viscosity: N/R
B.6.8
Radioactivity: N/R
Form (Radioactive Matl): N/R
Magnetism (Milligauss): N/R
Corrosion Rate (IPY): UNKNOWN
Autoignition Temperature: N/R
-----
                Fire and Explosion Hazard Data
Flash Point: 300F,149C
```

Flash Point Method: TCC Lower Explosive Limit: 3.2% Upper Explosive Limit: N/R

Extinguishing Media: USE WATER FOG, CARBON DIOXIDE, DRY CHEMICAL, ALCOHOL OR UNIVERSAL TYPE FOAMS APPLIED BY MANUFACTURERS RECOMMENED TECH.

Special Fire Fighting Proc: NONE Unusual Fire And Expl Hazrds: NONE

Reactivity Data

Stability: YES

Cond To Avoid (Stability): NONE

Materials To Avoid: NONE

Hazardous Decomp Products: CARBON MONOXIDE, CARBON DIOXIDE AND OXIDES OF NITROGEN, PHOSPHORUS, POTASSIUM, SODIUM AND SULFUR.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT APPLICABLE

Health Hazard Data

LD50-LC50 Mixture: ACUTE ORAL LD50 (RAT) IS UNKNOWN

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: NO

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: EYE IRRITANT. CAN CAUSE IRRITATION OF THROAT.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: NONE OF THE COMPOUNDS IN THIS PRODUCT IS LISTED BY IARC, NTP, OR OSHA AS A CARCINOGEN.

Signs/Symptoms Of Overexp: CAN CAUSE VOMITING, HEADACHE & DIZZINESS. INGESTION MAY CAUSE ABDOMINAL PAIN, DIZZINESS, MALAISE, LUMBAR PAIN, ALIGURA, UREMIA, AND NERVOUS SYSTEM DEPRESSION.

Med Cond Aggravated By Exp: PERSONS WITH A HISTORY OF KIDNEY OR LIVER DISORDERS MAYBE AT INCREASED RISK FROM EXPOSURE.

Emergency/First Aid Proc: EYES-FLUSH WITH LARGE QUANTITIES OF WATER. SKIN-REMOVE CONTAMINATED CLOTHES & FLUSH SKIN WITH WATER. INHALATION-REMOVE TO FRESH AIR. CALL A PHYSICIAN IF DISCOMFORT PERSISTS. INGESTION-IF CONSCIOUS, INDUCE VOMITING. CALL A PHYSICIAN IMMEDIATELY.

Precautions for Safe Handling and Use

Stens If Matl Pologod/Spills SWALL ONANTEDER GROWN DR DE PROGRAMMENT

Steps If Matl Released/Spill: SMALL QUANTITIES SHOULD BE FLUSHED WITH LARGE QUANTITIES OF WATER. LARGE SPILLS SHOULD BE COLLECTED FOR DISPOSAL. Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.

Waste Disposal Method: INCINERATE IN FURNANCE IN ACCORDANCE WITH LOCAL, COUNTY, STATE AND FEDERAL REGULATIONS.

Precautions-Handling/Storing: FOR INDUSTRIAL USE ONLY.

Other Precautions: DO NOT TAKE INTERNALLY. DO NOT BREATHE MIST FROM SPRAY. AVOID PROLONGED OR REPEATED BREATHING OF VAPOR. AVOID CONTACT OF VAPOR & MIST WITH EYES. FOR INDUSTRIAL USE ONLY.

Control Measures

Respiratory Protection: DUST/MIST RESPIRATOR.

Ventilation: USUALLY APPLIED OUTSIDE WHERE NATURAL VENTILATION EXIST. OPEN DOORS TO PROVIDE GOOD VENTILATION IF USED INSIDE.

Protective Gloves: RUBBER OR PLASTIC

Eye Protection: MOMOGOGGLES WITH OPTIONAL FACE SHIELD

Other Protective Equipment: EYE WASH STATION AND SAFETY SHOWER.
Work Hygienic Practices: OBSERVE GOOD PERSONAL HYGIENE PRACTICES AND
RECOMMENDED PROCEDURES. DO NOT WEAR CONTAMINATED CLOTHING OR FOOTWEAR.
Suppl. Safety & Health Data: DO NOT TAKE INTERNALLY. DO NOT GET ON SKIN OR
IN EYES. AVOID PROLONGED OR REPEATED BREATHING OF VAPOR. DO NOT BREATHE
MISTS. WASH THOROUGHLY AFTER HANDLING AND BEFORE EATING OR DRINKING OR
SMOKING OR USING REST ROOM.

Transportation Data

Transportation Action Code:

Transportation Focal Point: D Trans Data Review Date: 92163

DOT PSN Code: ZZZ

DOT Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION

DOT Class: N/R DOT Label: N/R

Limited Quantity: NO

DOT Mode Indicator:

Identification Number: N/R

Reportable Qty - Trans File: NO

DOT/DoD Exemption Number: N/R

IMO PSN Code: ZZZ

IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION

IMO Regulations Page Number: N/R

IMO UN Number: N/R IMO UN Class: N/R

IMO Subsidiary Risk Label: N/R

IATA PSN Code: ZZZ

IATA UN ID Number: N/R

IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION

IATA UN Class: N/R

IATA Subsidiary Risk Class: N/R

IATA Label: N/R

AFR 71-4 PSN Code: ZZZ

AFR 71-4 Prop. Shipping Name: NOT REGULATED FOR THIS MODE OF

TRANSPORTATION

AFR 71-4 Class: N/R

AFR 71-4 Label: N/R

AFR 71-4 ID Number: N/R

AF MMAC Code: NR

Tech Entry NOS Shipping Name:

Additional Trans Data:

Disposal Data

Disposal Data Action Code:

Disposal Data Focal Point:

Disposal Data Review Date:

Rec # For This Disp Entry:

Tot Disp Entries This Stock#:

Landfill Ban Item:

Disposal Supplemental Data:

1st EPA Haz Wst Code UnUsed:

1st EPA Haz Wst Name UnUsed:

1st EPA Haz Wst Char UnUsed:

1st EPA Acute Hazard UnUsed:

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2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
_______
Label Required: YES
Date of Technical Review: 11JUN92
Label Date: UNDATED
Manufacturer's Label No.: UNKNOWN
Label Status: D
Common Name of Product: ANTIFREEZE, ETHYLENE GLYCOT
Chronic Hazard: UNK
Signal Word: CAUTION!
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate: X
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight: X
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight: X
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None: X
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: EYE IRRITANT. CAN CAUSE IRRITATION OF THROAT.
IN CASE OF SPILL: SMALL QUANTITIES SHOULD BE FLUSHED WITH LARGE QUANTITIES
OF WATER. LARGE SPILLS SHOULD BE COLLECTED FOR DISPOSAL. FIRST AID: EYES-
FLUSH WITH LARGE QUANTITIES OF WATER. SKIN-REMOVE CONTAMINATED CLOTHES &
FLUSH SKIN WITH WATER. INHALATION-REMOVE TO FRESH AIR. CALL A PHYSICIAN IF
DISCOMFORT PERSISTS. INGESTION-IF CONSCIOUS, INDUCE VOMITING. CALL A
PHYSICIAN IMMEDIATELY.
Protect Eye: X
Protect Skin: X
Protect Respiratory: X
Mfg's Name From Label: CSD INC.
Mfg's Street From Label: 5 HACKBERRY LANE
Mfg's P.O. Box From Label: 687
Mfg's City From Label: CONROE
Mfg's State From Label: TX
Mfg's Zip Code From Label: 77305
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Mfg's Country From Label: US

Year Procured:

Emergency Ph. No. From Label: 409-756-1065

DOD Hazardous Materials Information System DOD 6050.5-L

AS OF November 1992

FSC: 6850

NIIN: 001817929

Manufacturer's CAGE: 2U130

Part No. Indicator: A

Part Number/Trade Name: MIL-A-46153B; ANTIFREEZE, ETHYLENE GLYCOL

General Information Item Name: ANTI-FREEZE, ETHYLENE GLYCOL, INHIBITED Manufacturer's Name: OLD WORLD AUTOMOTIVE PRODUCTS, INC. Manufacturer's Street: NINE NORTH BROADWAY Manufacturer's P. O. Box: N/K Manufacturer's City: DES PLAINES Manufacturer's State: IL Manufacturer's Country: US Manufacturer's Zip Code: 60016-2335 Manufacturer's Emerg Ph #: 312-699-2000 Manufacturer's Info Ph #: 312-699-2000 Distributor/Vendor # 1: J. B. WATTS COMPANY, INC./CHICAGO, IL. Distributor/Vendor # 1 Cage: 7U402 Distributor/Vendor # 2: Distributor/Vendor # 2 Cage: Distributor/Vendor # 3: Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage: Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 006 Tot Safety Entries This Stk#: 015

Status: SM

Date MSDS Prepared: 01AUG88

Safety Data Review Date: 26FEB90

Supply Item Manager: CX MSDS Preparer's Name: N/R

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City: Preparer's State: Preparer's Zip Code: Other MSDS Number:

MSDS Serial Number: BDGNG

Specification Number: MIL-A-46153

Spec Type, Grade, Class: REV B, AMD 1

Hazard Characteristic Code: N1

Unit Of Issue: GL

Unit Of Issue Container Qty: 1.0 GL

Type Of Container: BOTTLE Net Unit Weight: 1.0 GL NRC/State License Number: N/R

Net Explosive Weight:

Net Propellant Weight-Ammo: N/R

Coast Guard Ammunition Code:

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Ingredients/Identity Information
Proprietary: NO
Ingredient: ETHYLENE GLYCOL (SARA III)
Ingredient Sequence Number: 01
Percent: 90-95
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: KW2975000
CAS Number: 107-21-1
OSHA PEL: C 50 PPM
ACGIH TLV: C 50 PPM, VAPOR; 9192
Other Recommended Limit: N/R
-----
Proprietary: NO
Ingredient: WATER
Ingredient Sequence Number: 02
Percent: N/K
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: ZC0110000
CAS Number: 7732-18-5
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit:
-----
Proprietary: NO
Ingredient: INHIBITORS, SODIUM SALTS OF BORATES, PHOSPHATES, TRIAZOLES
Ingredient Sequence Number: 03
Percent: 4.0
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1000602IN
CAS Number: N/K
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: N/K
-----
Proprietary: NO
Ingredient: DIETHYLENE GLYCOL
Ingredient Sequence Number: 04
Percent: 0-5
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: ID5950000
CAS Number: 111-46-6
OSHA PEL: N/K
ACGIH TLV: 25 PPM
Other Recommended Limit: N/R
Physical/Chemical Characteristics
-----
Appearance And Odor: GREEN LIQUID WITH MILD ODOR
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Boiling Point: 398F/203C

Melting Point:

Vapor Pressure (MM Hg/70 F): 0.4

Vapor Density (Air=1): 2.1
Specific Gravity: 1.12
Decomposition Temperature:
Evaporation Rate And Ref: N/K
Solubility In Water: COMPLETE
Percent Volatiles By Volume: 97.0
Viscosity:
pH: N/K
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY):
Autoignition Temperature: 750F

ť.

Fire and Explosion Hazard Data

Flash Point: 245F/118C Flash Point Method: T.C.C. Lower Explosive Limit: 1.5 Upper Explosive Limit: N/K

Extinguishing Media: NFPA CLASS B EXTINGUISHERS FOR CLASS III B LIQUID FIRES (DRY CHEMICAL, FOAM, OR CARBON DIOXIDE (CO2)).

Special Fire Fighting Proc: WATER SPRAY MAY BE INEFFECTIVE ON FIRE, BUT CAN PROTECT FIRE-FIGHTERS & COOL CLOSED CONTAINERS. USE FOG NOZZLES FOR WATER. USE NIOSH APPRVD. POS-PRESS. "SCBA"

Unusual Fire And Expl Hazrds: CLOSED CONTAINERS MAY EXPLODE IF EXPOSED TO EXTREME HEAT. APPLYING TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. FOLLOW LABEL PRECAUTIONS.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): HEAT, OPEN FLAME

Materials To Avoid: OXIDIZERS SUCH AS PERMANGANTES, CHROMATES & PEROXIDES. Hazardous Decomp Products: CARBON MONOXIDE & CARBON DIOXIDE IN LIMITED AIR SUPPLY

Hazardous Poly Occur: NO Conditions To Avoid (Poly):

Health Hazard Data

LD50-LC50 Mixture: ORAL RAT:5840MG/KG

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: ACUTE: SKIN-IRRITATION, DEFATTING, & DERMATITIS; ABSORPTION THRU SKIN INCREASES EXPOSURE; EYES-IRRITANT, REDNESS, TEARING, & BLURRED VISION; INGEST-HARMFUL OR FATAL WHEN INGESTED. MAY CAUSE ABDOMINAL IRRITATION, NAUSEA, VOMITING & DIARRHEA; CHRONIC: EYE & SKIN IRRITATION. MAY AFFECT LIVER OR KIDNEY.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: N/R

Signs/Symptoms Of Overexp: CONJUNCTIVITIS; NAUSEA, VOMITING, ABDOMINAL PAIN, & OCCASIONALLY HEMATEMESIS; WEAKNESS; MYDRIASIS; CYANOSIS; TREMORS & CONVULSIONS; AREFLEXIA; NARCOSIS & COMA; ALBUMINURIA, HEMATURIA ANURIA;

LYMPHOCYTOSIS; CENTRAL NERVOUS SYSTEM DEPRESSION AND HEMATOPOIETIC DYSFUNCTION FROM INHAL. OVEREXPOSURE; (FP D) Med Cond Aggravated By Exp: MFR. CITES NONE; PRE-EXISTING RESPITORY, DERMATALOGICAL, RENAL, OR HEPATIC CONDITIONS MAY BE AGGRAVATED. Emergency/First Aid Proc: SKIN & EYES: FLUSH W/PLENTY OF WATER WITH AT LEAST 15 MINS. FOR EYES & GET MED. ATTN. AS REQUIRED; INHAL: REMOVE TO FRESH AIR & GIVE O2/CPR AS SITUATION DICTATES; INGEST: "GET IMMEDIATE" MEDICAL ATTN., & INDUCE VOMITING FOLLOWING APPROPRIATE MEDICAL INSTRUCTIONS.

Precautions for Safe Handling and Use ______

Steps If Matl Released/Spill: SMALL: MOP UP WITH ABSORBENT MATERIAL & TRANSFER TO HOOD; LARGE: ISOLATE FROM OXIDIZERS, HEAT & OPEN FLAME. PERSON W/O PROPER PROTECTION SHOULD BE KEPT FROM AREA UNTIL CLEANED UP. Neutralizing Agent: N/R

Waste Disposal Method: SMALL: EVAPORATE UNTIL ALL VAPORS ARE GONE. DISPOSE OF REMAINDER BY LEGALLY APPLICABLE METHODS; LARGE: RECYCLE OR INCINERATE OBSERVING APPROPRIATE LOCAL, STATE, & FEDERAL REGULATIONS. Precautions-Handling/Storing: STORE LARGE AMOUNTS IN STRUCTURES MADE FOR OSHA CLASS "OTHER LIQUIDS". AVOID FREE FALL OF LIQUID. GROUND CONTAINERS WHEN TRANSFERRING.

Other Precautions: DO NOT CUT, BRAZE OR WELD. EMPTY CONTAINERS MAY BE HAZAROUS. KEEP CONTAINERS TIGHTLY CLOSED. AVOID PROLONGED OR REPEATED BREATHING OF VAPOR OR SPRAY MIST. DONOT GET IN EYES, ON SKIN OR CLOTHING. ______

Control Measures

Respiratory Protection: IF ENGINEERING CONTROLS DO NOT KEEP INHALATION EXPOSURES BELOW PEL/TLV FOR TASK AT HAND, USE NIOSH/MSHA APPROVED RESPIRATORS AS PER CURRENT 29CFR1910.134, 'INSTRUCTIONS/WARNINGS' & NIOSH-RESPIRATOR DECISION LOGIC-PUB.#87-108 (FP D)

Ventilation: PROVIDE SUFFICIENT GENERAL/LOCAL EXHAUST VENTILATION IN PATTERN/VOLUME TO CONTROL INHALATION EXPOSURES BELOW PEL/TLV ! Protective Gloves: IMPERVIOUS TYPE FOR TASK AT HAND Eye Protection: SAFETY GLASSES W/SHLDS

Other Protective Equipment: APRON, EYE-WASH FACILITIES, SAFETY SHOWER Work Hygienic Practices: AVOID CONTACT WITH EYESS & SKIN; DONOT BREATHE VAPORS/MISTS. DO NOT TAKE INTERNALLY.

Suppl. Safety & Health Data: REVIEW INDUSTRIAL HYGIENE PRACTICES FOR USE OF THIS MATERIAL FOR TASK AT HAND !

DOD Hazardous Materials Information System DOD 6050.5-L AS OF November 1992

FSC: 6840

Manufacturer's CAGE: 2Y823 Part No. Indicator: A

NIIN: 012843982

Part Number/Trade Name: INSECT/ARTHROPOD REPELLENT LOTION

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: INSECT REPELLENT, PERSONAL APPLICATION

Manufacturer's Name: 3M CENTER; PERSONAL CARE PRODUCTS DIV

Manufacturer's Street: 3M CTR Manufacturer's P. O. Box: N/K

Manufacturer's City: ST.PAUL

Manufacturer's State: MN

Manufacturer's Country: US

Manufacturer's Zip Code: 55144-1000

Manufacturer's Emerg Ph #: 612-733-1110

Manufacturer's Info Ph #: 612-733-1110

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 001

Tot Safety Entries This Stk#: 001

Status: SM

Date MSDS Prepared: 07APR89

Safety Data Review Date: 10MAY90

Supply Item Manager: CX

MSDS Preparer's Name: N/K

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BGWGJ

Specification Number: N/R

Spec Type, Grade, Class: N/R

Hazard Characteristic Code: N1

Unit Of Issue: BX

Unit Of Issue Container Qty: 12 /20X TUBES

Type Of Container: 4 BOX/CASE

Net Unit Weight:

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NRC/State License Number: N/R
 Net Explosive Weight:
 Net Propellant Weight-Ammo: N/R
 Coast Guard Ammunition Code:
 _____
                 Ingredients/Identity Information
 ______
 Proprietary: NO
 Ingredient: N, N-DIETHYL-M-TOLUAMIDE
 Ingredient Sequence Number: 01
 Percent: 31.6
 Ingredient Action Code:
 Ingredient Focal Point: D
NIOSH (RTECS) Number: 1002152DT
CAS Number: 134-62-3
OSHA PEL: NONE ESTABLISHED
ACGIH TLV: NONE ETABLISHED
Other Recommended Limit:
 -----
Proprietary: NO
Ingredient: OTHER ISOMERS OF (N, N-DIETHYL-M-TOLUAMIDE)
Ingredient Sequence Number: 02
Percent: 1.7
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 9999999ZZ
CAS Number:
OSHA PEL: NONE ESTABLISHED
ACGIH TLV: NONE ESTABLISHED
Other Recommended Limit:
-----
Proprietary: NO
Ingredient: INERT INGREDIENTS
Ingredient Sequence Number: 03
Percent: 66.7
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1000082II
CAS Number:
OSHA PEL: NONE ESTABLISHED
ACGIH TLV: NONE ESTABLISHED
Other Recommended Limit:
______
                 Physical/Chemical Characteristics
______
Appearance And Odor: WHITE, LOTION/CREAM, LIKE DEET
Boiling Point: N/R
Melting Point: N/K
Vapor Pressure (MM Hg/70 F): N/R
Vapor Density (Air=1): N/R
Specific Gravity: 0.995-1.035
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: N/R
Solubility In Water: N/R
Percent Volatiles By Volume: >76.
Viscosity: 150-300 POS
pH: 7.35
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Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY): UNKNOWN
Autoignition Temperature: N/R
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Flash Point: 200F,93C
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Fire and Explosion Hazard Data

Flash Point Method: T.C.C. Lower Explosive Limit: N/K Upper Explosive Limit: N/K

Extinguishing Media: USE CARBON DIOXIDE, FOAM, DRY CHEMICAL, OR WATER FOG. Special Fire Fighting Proc: FIRE FIGHTERS SHOULD USE NIOSH APPROVED SCBA & FULL PROTECTIVE EQUIPMENT WHEN FIGHTING CHEMICAL FIRE. USE WATER SPRAY TO COOL NEARBY CONTAINERS EXPOSED TO FIRE.

Unusual Fire And Expl Hazrds: NONE EXPECTED

Reactivity Data

Stability: YES

Cond To Avoid (Stability): HIGH TEMPERATURES

Materials To Avoid: NONE NOTED

Hazardous Decomp Products: NOT SPECIFIED

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT APPLICABLE

Health Hazard Data

LD50-LC50 Mixture: ORAL RAT (LD50 > 5GM/KG)

Route Of Entry - Inhalation: N/K

Route Of Entry - Skin: N/K

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: ACUTE: MAY CAUSE IRRITATION. NO ADVERSE

EFFECTS EXPECTED.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: DATA PER MSDS

Signs/Symptoms Of Overexp: EYE: IRRITATES, REDNESS IF MATERIAL IS MADE TO COME IN CONTACT W/EYE. SKIN: MAY CAUSE SOME IRRITATION TO THOSE INDIVIDUALS SENSITIVE TO MATERIAL. NO ADVERSE EFFECTS EXPECTED (BASED ON TEST DATA & EXPERIENCE); INHAL: N/R; INGEST: PRATICALLY NON-TOXIC(RAT LD50 > 5GM/KG). Med Cond Aggravated By Exp: PRE-EXISTING CONDITIONS MAY BE WORSEN. Emergency/First Aid Proc: EYE: IMMEDIATELY FLUSH EYES W/ PLENTY OF WATER-GET MEDICAL ATTN. SKIN: N/R; INHAL: N/R; INGEST: DONOT INDUCE VOMITING.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: CLEAN UP ANY RESIDUE. PLACE IN AN APPROVED

METAL CONTAINER & SEAL. Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.

Waste Disposal Method: CONSULT LOCAL AUTHORITIES; DISPOSAL MUST BE IN

ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS

Precautions-Handling/Storing: STORE IN COOL, DRY AND WELL VENTILATED AREA.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

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Other Precautions: WASH THOROUGHLY AFTER EACH USE.
______
                       Control Measures
Respiratory Protection: NONE NORMALLY REQUIRED.
Ventilation: NORMAL ROOM VENTILATION.
Protective Gloves: NONE NORMALLY REQUIRED.
Eye Protection: SAFETY GLASSES RECOMMENDED.
Other Protective Equipment: EYE WASH STATION AND SAFETY SHOWER
RECOMMENDED.
Work Hygienic Practices: OBSERVE GOOD PERSONAL HYGIENE PRACTICES AND
RECOMMENDED PROCEDURES. DO NOT WEAR CONTAMINATED CLOTHING OR FOOTWEAR.
Suppl. Safety & Health Data: DO NOT GET ON SKIN, IN EYES OR ON CLOTHING.
DO NOT BREATHE VAPORS OR MISTS.
Transportation Data
______
Transportation Action Code:
Transportation Focal Point: D
Trans Data Review Date: 90122
DOT PSN Code: ZZZ
DOT Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION
DOT Class: N/R
DOT Label: N/R
Limited Quantity: N/R
DOT Mode Indicator:
Identification Number: N/R
Reportable Qty - Trans File: NO
DOT/DoD Exemption Number:
IMO PSN Code: ZZZ
IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION
IMO Regulations Page Number: N/R
IMO UN Number: N/R
IMO UN Class: N/R
IMO Subsidiary Risk Label: N/R
IATA PSN Code: ZZZ
IATA UN ID Number: N/R
IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
IATA UN Class: N/R
IATA Subsidiary Risk Class: N/R
IATA Label: N/R
AFR 71-4 PSN Code: ZZZ
AFR 71-4 Prop. Shipping Name: NOT REGULATED FOR THIS MODE OF
TRANSPORTATION
AFR 71-4 Class: N/R
AFR 71-4 Label: N/R
AFR 71-4 ID Number: N/R
AF MMAC Code:
Tech Entry NOS Shipping Name:
Additional Trans Data:
______
                        Disposal Data
Disposal Data Action Code:
```

Disposal Data Action Code: Disposal Data Focal Point: Disposal Data Review Date:

Rec # For This Disp Entry:

```
Tot Disp Entries This Stock#:
 Landfill Ban Item:
 Disposal Supplemental Data:
 1st EPA Haz Wst Code UnUsed:
 1st EPA Haz Wst Name UnUsed:
 1st EPA Haz Wst Char UnUsed:
 1st EPA Acute Hazard UnUsed:
 2nd EPA Haz Wst Code UnUsed:
 2nd EPA Haz Wst Name UnUsed:
 2nd EPA Haz Wst Char UnUsed:
 2nd EPA Acute Hazard UnUsed:
 3rd EPA Haz Wst Code UnUsed:
 3rd EPA Haz Wst Name UnUsed:
 3rd EPA Haz Wst Char UnUsed:
 3rd EPA Acute Hazard UnUsed:
 _______
                              Label Data
______
Label Required: NO *
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: X *
Common Name of Product: LABEL COVERED UNDER EPA REGS - HAZCOM LABEL NOT
AUTHORIZED *
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions:
Protect Eye:
Protect Skin:
Protect Respiratory:
Mfg's Name From Label:
Mfg's Street From Label:
Mfg's P.O. Box From Label:
Mfg's City From Label:
Mfg's State From Label:
Mfg's Zip Code From Label:
Mfg's Country From Label:
Emergency Ph. No. From Label:
Year Procured:
```

DOD Hazardous Materials Information System DOD 6050.5-L

AS OF November 1992

FSC: 6840

NIIN: 011514884

Manufacturer's CAGE: 70657

Part No. Indicator: A

Part Number/Trade Name: TALON-G RODENTICIDE BAIT PACK

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: RODENTICIDAL BAIT, ANTICOAGULANT

Manufacturer's Name: ICI AMERICAS INC FILMS DIV

Manufacturer's Street: NEW MURPHY RD AND CONCORD PIKE

Manufacturer's P. O. Box: N/K

Manufacturer's City: WILMINGTON

Manufacturer's State: DE

Manufacturer's Country: US

Manufacturer's Zip Code: 19897

Manufacturer's Emerg Ph #: 302-886-3000

Manufacturer's Info Ph #: 302-886-3000

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 002

Tot Safety Entries This Stk#: 003

Status: SE

Date MSDS Prepared: UNDATED

Safety Data Review Date: 22MAY91

Supply Item Manager: CX

MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BGPBK

Specification Number: N/R

Spec Type, Grade, Class:

Hazard Characteristic Code: T5

Unit Of Issue: CN

Unit Of Issue Container Qty: 11 LBS

Type Of Container: CAN

Net Unit Weight: 11 LBS

```
NRC/State License Number: N/R
Net Explosive Weight:
Net Propellant Weight-Ammo: N/R
Coast Guard Ammunition Code:
Ingredients/Identity Information
Proprietary: NO
Ingredient: BRODIFACOUM
Ingredient Sequence Number: 01
Percent: 0.005
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1000698BR
CAS Number: 56073-10-0
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED
-----
Proprietary: NO
Ingredient: CEREAL FORMULATION
Ingredient Sequence Number: 02
Percent: 99.995
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1000699CF
CAS Number: UNKNOWN
OSHA PEL: UNKNOWN
ACGIH TLV: UNKNOWN
Other Recommended Limit: NONE SPECIFIED
Physical/Chemical Characteristics
Appearance And Odor: AGREEN PELLETS WITH FAINT ODOR
Boiling Point: 228C(BRODIF
Melting Point: UNKNOWN
Vapor Pressure (MM Hg/70 F): NEGLIGIBLE
Vapor Density (Air=1): N/R
Specific Gravity: UNKNOWN
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: UNKNOWN
Solubility In Water: INSOLUBLE
Percent Volatiles By Volume: NEGLIG
Viscosity: N/R
pH: N/R
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY): UNKNOWN
Autoignition Temperature: N/R
Fire and Explosion Hazard Data
Flash Point: N/R
```

Flash Point Method: N/R Lower Explosive Limit: N/R Upper Explosive Limit: N/R

Extinguishing Media: USE WATER FOG, CARBON DIOXIDE, FOAM, HALON 1211 OR DRY CHEMICAL.

Special Fire Fighting Proc: WEAR FIRE FIGHTING PROTECTIVE EQUIPMENT AND A FULL FACED SELF CONTAINED BREATHING APPARATUS. EVACUATE AREA. COOL FIRE EXPOSED CONTAINERS WITH WATER SPRAY.

Unusual Fire And Expl Hazrds: UNKNOWN

Reactivity Data

Stability: YES

Cond To Avoid (Stability): HIGH HEAT, OPEN FLAMES

Materials To Avoid: UNKNOWN

Hazardous Decomp Products: CARBON MONOXIDE, CARBON DIOXIDE

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT APPLICABLE

Health Hazard Data

LD50-LC50 Mixture: LD50 (ORAL RAT) IS > 5 G/KG

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: ACUTE:EYES/SKIN:NO IRRITATION.INHALATION:NO TOXIC EFFECTS ARE KNOWN TO BE ASSOCIATED WITH INHALATION OF DUST FROM THIS MATERIAL.INGESTION:A SINGLE DOSE IS PRACTICALLY NON TOXIC.CHRONIC-NOT GIVEN.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: N/R

Signs/Symptoms Of Overexp: EFFECTS ARE THOSE OF ANTICOAGULANT OVER DOSAGE: REDUCED BLOOD CLOTTING ABILITY WITH SPONTANEOUS BLEEDING IN VARIOUS BODY ORGANS.BODY ACCUMULATION WILL PROBABLY RESULT AFTER REPEATED EXPOSURES TO BRODIFACOUM SINCE ITS HALF-LIFE IS ESTIMATED TO BE 120 DAYS.

Med Cond Aggravated By Exp: NONE SPECIFIED BY MANUFACTURER.

Emergency/First Aid Proc: GET MEDICAL ATTENTION.INHALATION:REMOVE TO FRESH AIR.EYES:IMMEDIATELY FLUSH WITH WATER FOR 15 MINUTES.SKIN:WASH WITH SOAP AND WATER.INGESTION:GIVE 1 OR 2 GLASSES OF WATER TO DRINK.NOTE TO PHYSICIAN:VITAMIN K1 IS ANTIDOTAL AT DOSES OF 10-20 MG COMBINED WITH BLOOD(PLASMA)TRANSFUSIONS IN CASES OF SEVERE HEMORRHAGE.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: SWEEP UP AND RECOVER OR MIX MATERIAL WITH

Neutralizing Agent: NOT APPLICABLE.

MOIST ABSORBENT AND SHOVEL INTO WASTE CONTAINER.

Waste Disposal Method: THIS MATERIAL IS TOXIC TO FISH AND WILDLIFE.DO NOT CONTAMINATE WATERWAYS.CONSULT LOCAL AUTHORITIES.DISPOSAL MUST BE MADE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.

Precautions-Handling/Storing: STORE IN A COOL, DRY AREA AWAY FROM FOOD, PETS & CHILDREN.

Other Precautions: PREVENT SKIN CONTACT.PREVENT ACCUMULATION OF DUST.STORE AWAY FROM PRODUCTS WITH STRONG ODORS.

Control Measures

Respiratory Protection: USE NIOSH/MSHA APPROVED RESPIRATOR AS REQUIRED IF ABOVE PEL/TLV OR SCBA IN AN ENCLOSED AREA.

Ventilation: LOCAL/GENERAL TO MAINTAIN PEL/TLV.

Protective Gloves: NEOPRENE, NITRILE, OR NATURAL RUBBER

Eye Protection: SAFETY GOGGLES WITH OPTIONAL FACE SHIELD

Other Protective Equipment: EYE WASH STATION AND SAFETY SHOWER, WORK

CLOTHING AND APRON AS REQUIRED.

Work Hygienic Practices: OBSERVE GOOD PERSONAL HYGIENE PRACTICES AND RECOMMENDED PROCEDURES. DO NOT WEAR CONTAMINATED CLOTHING OR FOOTWEAR.

Suppl. Safety & Health Data:

Transportation Data

Transportation Action Code:

Transportation Focal Point: D

Trans Data Review Date: 91142

DOT PSN Code: ZZZ

DOT Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION

DOT Class: N/R DOT Label: N/R

Limited Quantity: N/R

DOT Mode Indicator:

Identification Number: N/R

Reportable Qty - Trans File: NO

DOT/DoD Exemption Number:

IMO PSN Code: ZZZ

IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION

IMO Regulations Page Number: N/R

IMO UN Number: N/R IMO UN Class: N/R

IMO Subsidiary Risk Label: N/R

IATA PSN Code: ZZZ IATA UN ID Number: N/R

IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION

IATA UN Class: N/R

IATA Subsidiary Risk Class: N/R

IATA Label: N/R

AFR 71-4 PSN Code: ZZZ

AFR 71-4 Prop. Shipping Name: NOT REGULATED FOR THIS MODE OF

TRANSPORTATION

AFR 71-4 Class: N/R AFR 71-4 Label: N/R

AFR 71-4 ID Number: N/R

AF MMAC Code:

Tech Entry NOS Shipping Name:

Additional Trans Data:

Disposal Data

Disposal Data Action Code: Disposal Data Focal Point: E

Disposal Data Review Date: 89244 Rec # For This Disp Entry: 02

Tot Disp Entries This Stock#: 002

```
Landfill Ban Item:
Disposal Supplemental Data: MANUFACTURER STATES WEATHERBLOK BAIT AND
TALON-G RODENTICIDE BAIT PACK ARE NO THE SAME PRODUCT ALTHOUGH THEY HAVE
THE SAME ACTIVE INGREDIENT (JEFF HAGAN-ICI AMERICAS). FOR WEATHERBLOK BAIT
SEE IN CASE OF ACCIDENTAL EXPOSURE OR DISCHARGE, CONSULT HEALTH AND SAFETY
FILE FOR PRECAUTIONS.
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name Unused: SMALL QUANTITY PESTICIDES
1st EPA Haz Wst Char UnUsed: TOXIC; SEE'RESTRICTIONS'
1st EPA Acute Hazard UnUsed: NO
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
Label Required: NO *
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: X *
Common Name of Product: LABEL COVERED UNDER EPA REGS - HAZCOM LABEL NOT
AUTHORIZED *
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions:
Protect Eye:
Protect Skin:
Protect Respiratory:
Mfg's Name From Label:
Mfg's Street From Label:
Mfg's P.O. Box From Label:
Mfg's City From Label:
Mfg's State From Label:
Mfg's Zip Code From Label:
Mfg's Country From Label:
```

Emergency Ph. No. From Label: Year Procured:

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 6840

NIIN: 010676674

Manufacturer's CAGE: 0J289

Part No. Indicator: A

Part Number/Trade Name: INSECTICIDE, AEROSOL D-PHENOTHRIN, 2%

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: INSECTICIDE, D-PHENOTHRIN, 2% Manufacturer's Name: CSA LIMITED INC Manufacturer's Street: 16212 FM 249 Manufacturer's P. O. Box: 690347

Manufacturer's City: HOUSTON

Manufacturer's State: TX Manufacturer's Country: US

Manufacturer's Zip Code: 77269-0347

Manufacturer's Emerg Ph #: 713-444-6474

Manufacturer's Info Ph #: 713-444-6474

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 001 Tot Safety Entries This Stk#: 007

Status: SE

Date MSDS Prepared: 03NOV89

Safety Data Review Date: 08MAY91

Supply Item Manager: CX

MSDS Preparer's Name: SIDNEY K. SAKSENBERG

Preparer's Company: DIRECTOR OF SAFETY

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BHXFJ

Specification Number: MIL-I-51484/EA/

Spec Type, Grade, Class:

Hazard Characteristic Code: J7

Unit Of Issue: CN

Unit Of Issue Container Qty: 12 OZ

Type Of Container: CAN

Net Unit Weight: 12 OZ.

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NRC/State License Number: N/R
Net Explosive Weight:
Net Propellant Weight-Ammo: N/R
Coast Guard Ammunition Code:
_____
                 Ingredients/Identity Information
Proprietary: NO
Ingredient: TRICHLOROFLUOROMETHANE (CFC-11) (SARA III)
Ingredient Sequence Number: 01
Percent: 48
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: PB6125000
CAS Number: 75-69-4
OSHA PEL: C, 1000 PPM
ACGIH TLV: C, 1000 PPM; 9192
Other Recommended Limit: NONE SPECIFIED
-----
Proprietary: NO
Ingredient: DICHLORODIFLUOROMETHANE (SARA III)
Ingredient Sequence Number: 02
Percent: 48
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: PA8200000
CAS Number: 75-71-8
OSHA PEL: 1000 PPM
ACGIH TLV: 1000 PPM; 9192
Other Recommended Limit: NONE SPECIFIED
-----
Proprietary: NO
Ingredient: D-PHENOTRIN
Ingredient Sequence Number: 03
Percent: 2
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: GZ2002000
CAS Number: 26002-80-2
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED
_____
                Physical/Chemical Characteristics
Appearance And Odor: CLEAR COLORLESS LIQUID PACKED IN A PRESSURIZED
CONTAINER.
Boiling Point: -21F,-29C
Melting Point: N/K
Vapor Pressure (MM Hg/70 F): 80
Vapor Density (Air=1): 4.5
Specific Gravity: 1.40
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: 0.1 (CCL4=1)
Solubility In Water: 0.5% WT. @ 77 F
Percent Volatiles By Volume: N/K
Viscosity:
```

pH: N/K
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY): UNKNOWN
Autoignition Temperature:

Fire and Explosion Hazard Data

Flash Point: AEROSOL
Flash Point Method: N/R
Lower Explosive Limit: N/K
Upper Explosive Limit: N/K

Extinguishing Media: NON-FLAMMABLE. USE EXTINGUISHING MEDIA APPROPIATE FOR SURROUNDING FIRE.

Special Fire Fighting Proc: WEAR FIRE FIGHTING PROTECTIVE EQUIPMENT AND A FULL FACED SELF CONTAINED BREATHING APPARATUS. EVACUATE AREA. COOL FIRE EXPOSED CONTAINERS WITH WATER SPRAY.

Unusual Fire And Expl Hazrds: PRODUCT IS PACKED UNDER PRESSURE. STORAGE AT TEMPERATURES ABVOVE 120 F MAY CAUSE CONTAINER TO BURST.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): HIGH TEMPERATURES AND OPEN FLAMES

Materials To Avoid: NONE SPECIFIED BY MANUFACTURER.

Hazardous Decomp Products: NONE

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT APPLICABLE

Health Hazard Data

LD50-LC50 Mixture: UNKNOWN

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: NO

Route Of Entry - Ingestion: NO

Health Haz Acute And Chronic: ACUTE: SKIN AND EYE CONTACT CAN CAUSE FROST BITE. INHALATION CAN CAUSE LIGHT-HEADEDNESS, GIDDINESS, SHORTNESS OF BREATH. CHRONIC: INHALATION CAN LEAD TO NARCOSIS, CARDIAC IRREGULARITIES, UNCONSCIOUSNESS OR DEATH.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: NONE OF THE COMPOUNDS IN THIS PRODUCT IS LISTED BY IARC, NTP, OR OSHA AS A CARCINOGEN.

Signs/Symptoms Of Overexp: EYES AND SKIN: CONTACT CAN CAUSE FROSTBITE. INHALATION: LIGHT-HEADEDNESS, GIDDINESS, SHORTNESS OF BREATH, AND CAN LEAD TO NARCOSIS, CARDIAC IRREGULARITIES, UNCONSCIOUSNESS AND DEATH.

Med Cond Aggravated By Exp: NONE

Emergency/First Aid Proc: INHALATION:REMOVE TO FRESH AIR. RESUSCITATE IF NOT BREATHING. GET MEDICAL ATTENTION. EYES:IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR 15 MINUTES HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION. SKIN: REMOVE CONTAMINATED CLOTHING. WASH WITH SOAP AND WATER. IF IRRITATION PERSISTS, GET MEDICAL ADVICE. INGESTION:DO NOT INDUCE VOMITING. GIVE NOTHING BY MOUTH IF UNCONSCIOUS. GET IMMEDIATE MEDICAL ATTENTION.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: VENTILATE THE AREA AND ALLOW PROPELLANT TO EVAPORATE. USE ABSORBENT AND SWEEP UP THE RESIDUE.

Neutralizing Agent: NOT APPLICABLE.

Waste Disposal Method: CONTACT YOUR LOCAL ENVIRONMENTAL OFFICER.

MANUFACTURER RECOMMENDS TO ALLOW TO EVAPORATE AND DISCARD THE RESIDUE AS A HAZARDOUS WASTE. DISPOSE OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

Precautions-Handling/Storing: STORE IN A COOL, DRY, WELL VENTILATED AREA. KEEP CONTAINERS TIGHTLY CLOSED WHEN NOT IN USE. PROTECT CONTAINERS FROM PHYSICAL DAMAGE.

Other Precautions: WASH HANDS AFTER USE.

Control Measures

Respiratory Protection: NOT NEEDED.

Ventilation: MECHANICAL (GENERAL) ROOM VENTILATION IS NORMALLY ADEQUATE.

LOCAL EXHAUST MAY BE REQUIRED IF WORK AREA NOT VENTED.

Protective Gloves: NOT NEEDED

Eye Protection: SAFETY GLASSES.

Other Protective Equipment: NONE REQUIRED.

Work Hygienic Practices: AVOID BREATHING VAPORS. WASH HANDS AFTER USE.

Suppl. Safety & Health Data: NONE.

Transportation Data

Transportation Action Code:

Transportation Focal Point: D

Trans Data Review Date: 91128

DOT PSN Code: DTF

DOT Proper Shipping Name: COMPRESSED GAS, N.O.S.

DOT Class: NONFLAMMABLE GAS

DOT Label: NONFLAMMABLE GAS

Limited Quantity:

DOT Mode Indicator:

Identification Number: UN1956

Reportable Qty - Trans File:

DOT/DoD Exemption Number:

IMO PSN Code: AKH

IMO Proper Shipping Name: AEROSOLS/AEROSOL PRODUCT

IMO Regulations Page Number: SEE 9022

IMO UN Number: 1950

IMO UN Class: 9

IMO Subsidiary Risk Label:

IATA PSN Code: ANB

IATA UN ID Number: 1950

IATA Proper Shipping Name: AEROSOLS, NON-FLAMMABLE, N.O.S.

IATA UN Class: 2

IATA Subsidiary Risk Class: -

IATA Label: NON-FLAMMABLE GAS

AFR 71-4 PSN Code: CZF

AFR 71-4 Prop. Shipping Name: COMPRESSED GAS, N.O.S.

AFR 71-4 Class: NONFLAMMABLE GAS

AFR 71-4 Label: NONFLAMMABLE GAS

AFR 71-4 ID Number: UN1956

```
AF MMAC Code:
Tech Entry NOS Shipping Name: TRICHLOROFLUOROMETHANE,
DICHLOROFLUOROMETHANE.
Additional Trans Data:
Disposal Data
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
Label Required: NO *
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: X *
Common Name of Product: LABEL COVERED UNDER EPA REGS - HAZCOM LABEL NOT
AUTHORIZED *
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions:
Protect Eye:
Protect Skin:
```

Protect Respiratory:
Mfg's Name From Label:
Mfg's Street From Label:
Mfg's P.O. Box From Label:
Mfg's City From Label:
Mfg's State From Label:
Mfg's Zip Code From Label:
Mfg's Country From Label:
Emergency Ph. No. From Label:
Year Procured:

DOD Hazardous Materials Information System DOD 6050.5-L

AS OF November 1992

FSC: 6810

NIIN: 006640283

Manufacturer's CAGE: 1B464

Part No. Indicator: A

Part Number/Trade Name: FERRIC CHLORIDE

1000 ibs R.Q. HAZ. Sub.

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name:

Manufacturer's Name: FISHER SCIENTIFIC COMPANY

Manufacturer's Street: 1 REAGENT LANE

Manufacturer's P. O. Box:

Manufacturer's City: FAIR LAWN

Manufacturer's State: NJ

Manufacturer's Country: US

Manufacturer's Zip Code: 07410

Manufacturer's Emerg Ph #: 201-796-7100 OR 201-796-7523

Manufacturer's Info Ph #: 201-796-7100

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: N

Record No. For Safety Entry: 002

Tot Safety Entries This Stk#: 005

Status:

Date MSDS Prepared: INTERIM

Safety Data Review Date: 20AUG86

Supply Item Manager:

MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BFKJB

Specification Number:

Spec Type, Grade, Class:

Hazard Characteristic Code: C1

Unit Of Issue: DR

Unit Of Issue Container Qty: 100 LB.

Type Of Container:

Net Unit Weight:

(60) (100) = 6000 lbs

```
NRC/State License Number: N/A
Net Explosive Weight:
Net Propellant Weight-Ammo: N/A
Coast Guard Ammunition Code:
_____
              Ingredients/Identity Information
Proprietary: NO
Ingredient: FERRIC CHLORIDE (SARA III)
Ingredient Sequence Number: 01
Percent:
Ingredient Action Code:
Ingredient Focal Point: N
NIOSH (RTECS) Number: LJ9100000
CAS Number: 7705-08-0
OSHA PEL: 1 MG FE/M3
ACGIH TLV: 1 MG FE/M3; 9192
Other Recommended Limit:
-----
              Physical/Chemical Characteristics
Appearance And Odor: BRIGHT YELLOW MASS(LUMP)
Boiling Point: 280-285C
Melting Point:
Vapor Pressure (MM Hg/70 F):
Vapor Density (Air=1):
Specific Gravity: 2.80
Decomposition Temperature:
Evaporation Rate And Ref:
Solubility In Water: SOLUBLE
Percent Volatiles By Volume:
Viscosity:
pH:
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY):
Autoignition Temperature:
Fire and Explosion Hazard Data
Flash Point:
Flash Point Method:
Lower Explosive Limit:
Upper Explosive Limit:
Extinguishing Media:
Special Fire Fighting Proc: SELF CONTAINED BREATHING APPARATUS
Unusual Fire And Expl Hazrds: EMITS FUMES OF HYDROGEN CHLORIDE IN A FIRE.
Reactivity Data
_____
Stability: YES
Cond To Avoid (Stability):
Materials To Avoid:
Hazardous Decomp Products: HYDROGEN CHLORIDE WHEN HEATED
Hazardous Poly Occur: NO
```

Conditions To Avoid (Poly):

Health Hazard Data

LD50-LC50 Mixture:

Route Of Entry - Inhalation:

Route Of Entry - Skin:

Route Of Entry - Ingestion:

Health Haz Acute And Chronic:

Carcinogenicity - NTP:

Carcinogenicity - IARC:

Carcinogenicity - OSHA:

Explanation Carcinogenicity:

Signs/Symptoms Of Overexp: CAUSES IRRITATION

Med Cond Aggravated By Exp:

Emergency/First Aid Proc: IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN W/PLENTY OF WATER FOR AT LEAST 15 MINUTES.FOR EYES, CALL A PHYSICIAN.IF SWALLOWED IF CONSCIOUS, INDUCE VOMITING AND CALL A PHYSICIAN.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: PLACE IN A SUITABLE CONTAINER.

Neutralizing Agent:

Waste Disposal Method: DISPOSE OF BY MEANS AS TO COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS OR CONTACT AN APPROVED AND LICENSED DISPOSAL AGENCY.

Precautions-Handling/Storing:

Other Precautions:

Control Measures

Respiratory Protection:

Ventilation: LOCAL OR MECHANICAL(GENERAL)-ACCEPTABLE

Protective Gloves: RUBBER GLOVES Eye Protection: SAFETY GLASSES Other Protective Equipment: Work Hygienic Practices: Suppl. Safety & Health Data:

Transportation Data

Transportation Action Code: Transportation Focal Point: N Trans Data Review Date: 81159

DOT PSN Code: GDN

DOT Proper Shipping Name: FERRIC CHLORIDE, SOLID

DOT Class: ORM-B
DOT Label: NONE
Limited Quantity: NO
DOT Mode Indicator: EA

Identification Number: UN1773 Reportable Qty - Trans File:

DOT/DoD Exemption Number:

IMO PSN Code: HEC

IMO Proper Shipping Name: FERRIC CHLORIDE, ANHYDROUS

IMO Regulations Page Number: 8173

IMO UN Number: 1773

IMO UN Class: 8

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IMO Subsidiary Risk Label: -
IATA PSN Code: LUN
IATA UN ID Number: 1773
IATA Proper Shipping Name: FERRIC CHLORIDE
IATA UN Class: 8
IATA Subsidiary Risk Class:
IATA Label: CORROSIVE
AFR 71-4 PSN Code: EHN
AFR 71-4 Prop. Shipping Name: FERRIC CHLORIDE, SOLID
AFR 71-4 Class: ORM-B
AFR 71-4 Label: NONE
AFR 71-4 ID Number: UN1773
AF MMAC Code:
Tech Entry NOS Shipping Name:
Additional Trans Data:
Disposal Data
Disposal Data Action Code:
Disposal Data Focal Point: E
Disposal Data Review Date: 88085
Rec # For This Disp Entry: 01
Tot Disp Entries This Stock#: 002
Landfill Ban Item:
Disposal Supplemental Data: IN CASE OF ACCIDENTAL EXPOSURE OR DISCHARGE,
CONSULT HEALTH AND SAFETY FILE FOR PRECAUTIONS.
1st EPA Haz Wst Code UnUsed: D002
1st EPA Haz Wst Name UnUsed: CORROSIVE
1st EPA Haz Wst Char UnUsed: CORROSIVITY
1st EPA Acute Hazard UnUsed: NO
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: E
Common Name of Product:
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
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Contact Hazard-Severe:

Fire Hazard-None:

Fire Hazard-Slight:

Fire Hazard-Moderate:

Fire Hazard-Severe:

Reactivity Hazard-None:

Reactivity Hazard-Slight:

Reactivity Hazard-Moderate:

Reactivity Hazard-Severe:

Special Hazard Precautions: CONTACT MAY CAUSE BURNS TO SKIN AND EYES. FIRE

MAY PRODUCE IRRITATING OR POISONOUS GASES. RUNOFF FROM FIRE CONTROL OR

DILUTION WATER MAY CAUSE POLLUTION.

Protect Eye:

Protect Skin:

Protect Respiratory:

Mfg's Name From Label: FISHER SCIENTIFIC, CHEMICAL DIV.

Mfg's Street From Label: 1 REAGENT LANE

Mfg's P.O. Box From Label:

Mfg's City From Label: FAIR LAWN

Mfg's State From Label: NJ

Mfg's Zip Code From Label: 07410

Mfg's Country From Label: US

Emergency Ph. No. From Label: 201-796-7100 OR 201-796-7523

Year Procured:

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 6810

NIIN: 008938138

Manufacturer's CAGE: 9A273

Part No. Indicator: A

Part Number/Trade Name: O-S-801, SULFURIC ACID, ELECTROLYTE

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: SULFURIC ACID, ELECTROLYTE Manufacturer's Name: DOMINION CHEM CO Manufacturer's Street: PUDDLEDOCK RD

Manufacturer's P. O. Box: 1069

Manufacturer's City: PETERSBURG

Manufacturer's State: VA Manufacturer's Country: US

Manufacturer's Zip Code: 23803

Manufacturer's Emerg Ph #: Manufacturer's Info Ph #:

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 008 Tot Safety Entries This Stk#: 008

Status:

Date MSDS Prepared: PRE-HCS

Safety Data Review Date: 20FEB81

Supply Item Manager: CX MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code: Other MSDS Number:

MSDS Serial Number: BFVDB

Specification Number: O-S-801

Spec Type, Grade, Class:

Hazard Characteristic Code: C1

Unit Of Issue: DR

Unit Of Issue Container Qty: 15 GAL

Type Of Container: POLETHYL

Net Unit Weight:

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NRC/State License Number:
Net Explosive Weight:
Net Propellant Weight-Ammo:
Coast Guard Ammunition Code:
_____
               Ingredients/Identity Information
______
Proprietary: NO
Ingredient: SULFURIC ACID (SARA III)
Ingredient Sequence Number: 01
Percent: 37.
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: WS5600000
CAS Number: 7664-93-9
OSHA PEL: 1 MG/M3
ACGIH TLV: 1 MG/M3; 9192
Other Recommended Limit:
------
Proprietary: NO
Ingredient: WATER
Ingredient Sequence Number: 02
Percent: 63.
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: ZC0110000
CAS Number:
OSHA PEL:
ACGIH TLV: N/A
Other Recommended Limit:
Physical/Chemical Characteristics
Appearance And Odor: CLEAR, COLORLESS LIQ, NO ODOR
Boiling Point: 234F
Melting Point:
Vapor Pressure (MM Hg/70 F): 11
Vapor Density (Air=1):
Specific Gravity: 1.281
Decomposition Temperature:
Evaporation Rate And Ref: <1
Solubility In Water: COMPLETE
Percent Volatiles By Volume: 0
Viscosity:
pH:
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY):
Autoignition Temperature:
Fire and Explosion Hazard Data
_____
Lower Explosive Limit:
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Flash Point: N/A Flash Point Method:

Upper Explosive Limit:

Extinguishing Media: DRY CHEM

Special Fire Fighting Proc: WEAR FULL PROT CLOTHING

Unusual Fire And Expl Hazrds: ACID REACTS W/MOST METALS TO GIVE FLAMMABLE HYDROGEN GAS

Reactivity Data

Stability: YES

Cond To Avoid (Stability): MIXING W/CYANIDES OR SULFIDES WILL RELEASE

POISONOUS GAS

Materials To Avoid: STRONG REDUCING AGENTS, POWDERED METALS

Hazardous Decomp Products: SULFUR TRIOXIDE

Hazardous Poly Occur:

Conditions To Avoid (Poly):

Health Hazard Data

LD50-LC50 Mixture:

Route Of Entry - Inhalation:

Route Of Entry - Skin:

Route Of Entry - Ingestion:

Health Haz Acute And Chronic:

Carcinogenicity - NTP:

Carcinogenicity - IARC:

Carcinogenicity - OSHA:

Explanation Carcinogenicity:

Signs/Symptoms Of Overexp: SEVERE BURNS TO SKIN/EYES, ALL TISSUE ON CNTCT.

RESP IRRIT ON INH OF VAPORS/MIST.

Med Cond Aggravated By Exp:

Emergency/First Aid Proc: SKIN/EYES: FLUSH W/PLENTY WATER 15 MIN WHILE REMOVING CONTAM CLOTHING/SHOES. CALL MD. INH: REMOVE PERSON TO FRESH AIR. GET PROMPT MED ATTENTION.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill WEAR FULL PROT CLOTHING PRIOUS SQUEES OF

Steps If Matl Released/Spill: WEAR FULL PROT CLOTHING. REMOVE SOURCES OF IGNITION. FLUSH AWAY BY FLOODING W/WATER APPLIED QUICKLY TO ENTIRE AREA. Neutralizing Agent:

Waste Disposal Method: FLUSH AS INDICATED. NEUTRALIZE WASHINGS W/LIME OR SODA ASH. FLUSH TO APPROPRIATE CONTAINMENT SYSTEM. TAKE CARE NOT TO GET WATER IN SULFURIC ACID STG TANK AS VIOLENT REACTION WILL OCCUR.

Precautions-Handling/Storing: PROTECT AGAINST PHYSICAL DAMAGE & WATER Other Precautions: REACTS VIOLENTLY W/WATER ACCOMPANIED BY HEAT EVOLUTION. SULFURIC ACIDS ATTACK MAY METALS RELEASING FLAMMABLE HYDROGEN GAS.

Control Measures

Respiratory Protection: NONE FOR NORMAL USE

Ventilation: MAINTAIN ADEQUATE VENT

Protective Gloves: RUBBER

Eye Protection: CHEM SAFETY GOGGLES

Other Protective Equipment: RUBBER GAUNTLETS, APRON, HOOD OR HARD HAT

Work Hygienic Practices:

Suppl. Safety & Health Data:

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Transportation Data
Transportation Action Code:
Transportation Focal Point: D
Trans Data Review Date:
DOT PSN Code: BRJ
DOT Proper Shipping Name: BATTERY FLUID, ACID
DOT Class: CORROSIVE MATERIAL
DOT Label: CORROSIVE
Limited Quantity: NO
DOT Mode Indicator:
Identification Number: UN2796
Reportable Qty - Trans File: NO
DOT/DoD Exemption Number:
IMO PSN Code: BWH
IMO Proper Shipping Name: BATTERY FLUID, ACID
IMO Regulations Page Number: SEE 8230
IMO UN Number: 2796
IMO UN Class: 8
IMO Subsidiary Risk Label: -
IATA PSN Code: DAG
IATA UN ID Number: 2796
IATA Proper Shipping Name: BATTERY FLUID, ACID
IATA UN Class: 8
IATA Subsidiary Risk Class:
IATA Label: CORROSIVE
AFR 71-4 PSN Code: BJH
AFR 71-4 Prop. Shipping Name: BATTERY FLUID, ACID
AFR 71-4 Class: CORROSIVE MATERIAL
AFR 71-4 Label: CORROSIVE
AFR 71-4 ID Number: UN2796
AF MMAC Code:
Tech Entry NOS Shipping Name:
Additional Trans Data: CHECK REGS FOR VOLUME LIMITATION FOR AIR MODE.
Disposal Data
______
Disposal Data Action Code:
Disposal Data Focal Point: E
Disposal Data Review Date: 89199
Rec # For This Disp Entry: 08
Tot Disp Entries This Stock#: 008
Landfill Ban Item:
Disposal Supplemental Data: IN CASE OF ACCIDENTAL EXPOSURE OR DISCHARGE,
CONSULT HEALTH AND SAFETY FILE FOR PRECAUTIONS.
1st EPA Haz Wst Code UnUsed: D002
1st EPA Haz Wst Name UnUsed: CORROSIVE
1st EPA Haz Wst Char UnUsed: CORROSIVITY
1st EPA Acute Hazard UnUsed: NO
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
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2nd EPA Acute Hazard UnUsed: 3rd EPA Haz Wst Code UnUsed: 3rd EPA Haz Wst Name UnUsed: 3rd EPA Haz Wst Char UnUsed:

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3rd EPA Acute Hazard UnUsed:
Label Data
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: E
Common Name of Product:
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: POISONOUS IF INHALED OR SWALLOWED. CONTACT
CAUSES SEVERE BURNS TO SKIN AND EYES. RUNOFF FROM FIRE CONTROL OR DILUTION
WATER MAY CAUSE POLLUTION.
Protect Eye:
Protect Skin:
Protect Respiratory:
```

Mfg's Name From Label: DOMINION CHEMICAL CO Mfg's Street From Label: PUDDLEDOCK RD

Mfg's P.O. Box From Label: 1069 Mfg's City From Label: PETERSBURG

Mfg's Zip Code From Label: 23803 Mfg's Country From Label: US Emergency Ph. No. From Label:

Mfg's State From Label: VA

Year Procured:

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 6810

NIIN: 008431640

Manufacturer's CAGE: 9A273

Part No. Indicator: A

Part Number/Trade Name: BATTERY ACID (O-S-801, CLASS 3)

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: SULFURIC ACID, ELECTROLYTE

Manufacturer's Name: DOMINION CHEMICAL COMPANY

Manufacturer's Street: PUDDLEDOCK RD

Manufacturer's P. O. Box: 1069

Manufacturer's City: PETERSBURG

Manufacturer's State: VA

Manufacturer's Country: US

Manufacturer's Zip Code: 23803

Manufacturer's Emerg Ph #:

Manufacturer's Info Ph #:

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 006

Tot Safety Entries This Stk#: 007

Status:

Date MSDS Prepared: INTERIM

Safety Data Review Date: 17DEC86

Supply Item Manager: CX

MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BFSFZ

Specification Number: O-S-801

Spec Type, Grade, Class:

Hazard Characteristic Code: C1

Unit Of Issue: DR

Unit Of Issue Container Qty: 5.0 GL

Type Of Container: DRUM

Net Unit Weight: 5.0 GL

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NRC/State License Number:
Net Explosive Weight:
Net Propellant Weight-Ammo:
Coast Guard Ammunition Code:
Ingredients/Identity Information
______
Proprietary: NO
Ingredient: SULFURIC ACID (SARA III)
Ingredient Sequence Number: 01
Percent: 37.0
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: WS5600000
CAS Number: 7664-93-9
OSHA PEL: 1 MG/M3
ACGIH TLV: 1 MG/M3; 9192
Other Recommended Limit:
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Proprietary: NO
Ingredient: WATER CAS#
Ingredient Sequence Number: 02
Percent: <63
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: ZC0110000
CAS Number:
OSHA PEL:
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit:
Physical/Chemical Characteristics
-----
Appearance And Odor: COLORLESS TO BROWNISH OILY LIQUID WITH NO ODOR
Boiling Point: 234F/112C
Melting Point:
Vapor Pressure (MM Hg/70 F): 11
Vapor Density (Air=1): N/K
Specific Gravity: 1.280
Decomposition Temperature:
Evaporation Rate And Ref: <1.0 (BUT ACET=1)
Solubility In Water: COMPLETE
Percent Volatiles By Volume: 0.0
Viscosity:
pH:
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY):
Autoignition Temperature:
Fire and Explosion Hazard Data
Flash Point: NONE
Flash Point Method:
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Lower Explosive Limit: Upper Explosive Limit: Extinguishing Media: FOR COMBUSTIBLES, USE SUITABLE DRY CHEMICAL. NO WATER ON ACID

Special Fire Fighting Proc: GAS MASK WITH SULFURIC ACID ABSORBING CANISTER, BUREAU MINES

Unusual Fire And Expl Hazrds: REACTS WITH STEEL AND MANY COMMON METALS TO PRODUCE HYDROGEN GAS WHICH CAN BE A FIRE & EXPLOSION.

Reactivity Data

Stability: YES

Cond To Avoid (Stability):

Materials To Avoid: CARBIDES, CHLORATES, FULMINATES, NITRATES, PICRATES, POWDER METAL.

Hazardous Decomp Products: SULFUR TRIOXIDE GAS, HYDROGEN.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly):

Health Hazard Data

LD50-LC50 Mixture:

Route Of Entry - Inhalation:

Route Of Entry - Skin:

Route Of Entry - Ingestion:

Health Haz Acute And Chronic:

Carcinogenicity - NTP:

Carcinogenicity - IARC:

Carcinogenicity - OSHA:

Explanation Carcinogenicity:

Signs/Symptoms Of Overexp: SEVERE BURNS TO SKIN OR EYES.INHALATION OF MIST FROM HOT ACID CAN BE INJURIOUS TO LUNGS.

Med Cond Aggravated By Exp:

Emergency/First Aid Proc: IRRIGATE EYES WITH WATER FOR AT LEAST 15 MINS.FOR EYES OR SKIN BURNS, GET IMMEDIATE MEDICAL ATTENTION. WASH CONTAMINATED AREAS OF BODY WITH SOAP AND WATER. STOMACH WASH, IF SWALLOWED. OXYGEN WITH USE OF INTERMITTENT POSITIVE PRESSURE BREATHING APPARATUS

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: COVER WITH SODIUM CARBONATE OR AN EQUAL AMOUNT OF SODA ASH AND SLAKED LIME.AFTER MIXING ADD WATER IF NECESSARY TO FORM A SLURRY.SODA ASH AND LIMESTONE WILL RELEASE CARBON DIOXIDE GAS REQUIRING ADEQUATE VENTILATION

Neutralizing Agent:

Waste Disposal Method: NEUTRALIZE ACID WITH LARGE AMOUNT OF WATER, SODA ASH & SLAKED LIME BY STIRRING.DISPOSE OF BY STORING IN APPROVED STORAGE CONTAINERS FOR CORROSIVE LIQUIDS

Precautions-Handling/Storing: CORROSIVE LIQUID. STORE IN COOL, PROTECTED AREA. WEAR RUBBER GLOVES, CHEMICAL GOGGLES, RUB BOOTS, CCR.
Other Precautions: AVOID CONTACT WITH CARBIDES, POWDERED METALS, CHLORATES, FULMINATES, PICRATES, SULFIDES, TO PREVENT EXOTHERMIC REACTIONS & RELEASE OF TOXIC/FLAMMABLE GASES.

Control Measures

Respiratory Protection: INDUSTRIAL CANISTER TYPEKGAS MASK APPROVED BY U.S. BUREAU OF MINES

Ventilation: AS REQUIRED TO REMOVE ANY MISTS OF TOXIC GASES

Protective Gloves: RUBBER GLOVE Eye Protection: CHEMICAL GOGGLES

Other Protective Equipment: RUBBER APRONS, RUBBER SAFETY SHOES, FACE SHIELD,

CLOTHING

Work Hygienic Practices:

Suppl. Safety & Health Data: MSDS UNDATED; DATA ON MSDS REPRESENTS SULFURIC ACID USED IN BATTERY, AS BATTERY ACID.

Transportation Data

Transportation Action Code: Transportation Focal Point: D Trans Data Review Date: 86351

DOT PSN Code: BRJ

DOT Proper Shipping Name: BATTERY FLUID, ACID

DOT Class: CORROSIVE MATERIAL

DOT Label: CORROSIVE Limited Quantity: NO

DOT Mode Indicator:

Identification Number: UN2796
Reportable Qty - Trans File:
DOT/DoD Exemption Number:

IMO PSN Code: BWH

IMO Proper Shipping Name: BATTERY FLUID, ACID

IMO Regulations Page Number: SEE 8230

IMO UN Number: 2796

IMO UN Class: 8

IMO Subsidiary Risk Label: -

IATA PSN Code: DAG

IATA UN ID Number: 2796

IATA Proper Shipping Name: BATTERY FLUID, ACID

IATA UN Class: 8

IATA Subsidiary Risk Class:

IATA Label: CORROSIVE AFR 71-4 PSN Code: BJH

AFR 71-4 Prop. Shipping Name: BATTERY FLUID, ACID

AFR 71-4 Class: CORROSIVE MATERIAL

AFR 71-4 Label: CORROSIVE AFR 71-4 ID Number: UN2796

AF MMAC Code:

Tech Entry NOS Shipping Name: (CONTAINS SULFURIC ACID 37%, AS BATTERY ACID)

Additional Trans Data: CONCENTRATED ACID OXIDIZES, DEHYDRATES OR SULFONATES MOST ORGANIC COMPOUNDS.MIXED WITH WATER, EVOLVES MUCH HEAT. UNEUTRALIZED ACID MUST NOT CONTACT SULFIDE WASTES TO AVOID EVOLVING POISONOUS HYDROGEN SULFIDE GAS

Disposal Data

Disposal Data Action Code:

Disposal Data Focal Point: E

Disposal Data Review Date: 89199

Rec # For This Disp Entry: 04

Tot Disp Entries This Stock#: 005

Landfill Ban Item:

Disposal Supplemental Data: MSDS UNDATED; DATA ON MSDS REPRESENTS SULFURIC ACID USED IN BATTERY, AS BATTERY ACID. IN CASE OF ACCIDENTAL EXPOSURE OR

```
DISCHARGE, CONSULT HEALTH AND SAFETY FILE FOR PRECAUTIONS.
1st EPA Haz Wst Code UnUsed: D002
1st EPA Haz Wst Name UnUsed: CORROSIVE
1st EPA Haz Wst Char UnUsed: CORROSIVITY
1st EPA Acute Hazard UnUsed: NO
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
______
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: E
Common Name of Product:
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: POISONOUS IF INHALED OR SWALLOWED. CONTACT
CAUSES SEVERE BURNS TO SKIN AND EYES. RUNOFF FROM FIRE CONTROL OR DILUTION
WATER MAY CAUSE POLLUTION.
Protect Eye:
Protect Skin:
Protect Respiratory:
Mfg's Name From Label: DOMINION CHEMICAL CO
Mfg's Street From Label: PUDDLEDOCK RD
Mfg's P.O. Box From Label: 1069
Mfg's City From Label: PETERSBURG
Mfg's State From Label: VA
Mfg's Zip Code From Label: 23803
Mfg's Country From Label: US
Emergency Ph. No. From Label:
Year Procured:
```

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 6850

NIIN: 007534870

Manufacturer's CAGE: 64713

Part No. Indicator: A

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: DECONTAMINATING AGENT

Manufacturer's Name: POLY RESEARCH CORP Manufacturer's Street: 125 CORPORATE DR

Manufacturer's P. O. Box:

Manufacturer's City: HOLTSVILLE

Manufacturer's State: NY Manufacturer's Country: US Manufacturer's Zip Code: 11742

Manufacturer's Emerg Ph #: 301-671-4411/301-278-5201

Manufacturer's Info Ph #: 516-758-0460

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 002

Tot Safety Entries This Stk#: 005 *

Status: SE

Date MSDS Prepared: 24MAY89

Safety Data Review Date: 11JUN92

Supply Item Manager: BF

MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BMXHZ

Specification Number: MIL-D-50030

Spec Type, Grade, Class: REV F

Hazard Characteristic Code: J6

Unit Of Issue: CN

Unit Of Issue Container Qty: 5 GAL

Type Of Container: CAN Net Unit Weight: 40.4 LBS

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NRC/State License Number: N/R
Net Explosive Weight: N/R
Net Propellant Weight-Ammo: N/R
Coast Guard Ammunition Code: N/R
-----
                 Ingredients/Identity Information
______
Proprietary: NO
Ingredient: DIETHYLENE TRIAMINE
Ingredient Sequence Number: 01
Percent: 69-71%
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: IE1225000
CAS Number: 111-40-0
OSHA PEL: 1 PPM
ACGIH TLV: S, 1 PPM; 9192
Other Recommended Limit: NONE DETERMINED
-----
Proprietary: NO
Ingredient: 2-METHOXYETHANOL (EGME) (SARA III)
Ingredient Sequence Number: 02
Percent: 27-29%.
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: KL5775000
CAS Number: 109-86-4
OSHA PEL: S, 25 PPM
ACGIH TLV: S, 5 PPM; 9192
Other Recommended Limit: NONE DETERMINED
------
Proprietary: NO
Ingredient: SODIUM HYDROXIDE (SARA III)
Ingredient Sequence Number: 03
Percent: 1.9-2.1
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: WB4900000
CAS Number: 1310-73-2
OSHA PEL: C 2 MG/M3
ACGIH TLV: C 2 MG/M3; 9192
Other Recommended Limit: NONE DETERMINED
------
                 Physical/Chemical Characteristics
______
Appearance And Odor: CLEAR AMBER SOLUTION WITH AMMONIA-LIKE ODOR.
Boiling Point: 380F,193C
Melting Point: N/R
Vapor Pressure (MM Hg/70 F): N/R
Vapor Density (Air=1): N/R
Specific Gravity: 0.97 - 0.98
Decomposition Temperature: N/R
Evaporation Rate And Ref: N/R
Solubility In Water: N/R
Percent Volatiles By Volume: N/R
Viscosity: N/K
```

pH: N/R

Radioactivity: N/R

Form (Radioactive Matl): N/R Magnetism (Milligauss): N/R Corrosion Rate (IPY): N/R Autoignition Temperature: N/K

Fire and Explosion Hazard Data

71--b P-/-b 1607 767

Flash Point: 168F,76C Flash Point Method: N/R Lower Explosive Limit: N/R Upper Explosive Limit: N/R

Extinguishing Media: CARBON DIOXIDE, ALCOHOL FOAM, WATER.

Special Fire Fighting Proc: NONE SPECIFIED BY MANUFACTURER.

Unusual Fire And Expl Hazrds: NEVER MIX OR STORE WITH ACIDS, OXIDIZING AGENT OR STB (SUPER TROPICAL BLEACH) TOGETHER; FIRE OR EXPLOSION MAY

RESULT.

Reactivity Data

Cond To Avoid (Stability): EXPOSURE TO AIR, DS2 WILL DETERIORATE IN AIR. EXPOSURE OF 48 HOURS OR MORE TO OPEN AIR PRODUCES GELATIN-LIKE BODIES. Materials To Avoid: CORROSIVE. INCOMPATIBLE WITH AL, CD, ZN, SOME PLASTICS, PAINT, WOOL, LEATHER & OXIDIZING MATERIALS.

Hazardous Decomp Products: NONE SPECIFIED BY MANUFACTURER.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT APPLICABLE

Health Hazard Data

LD50-LC50 Mixture: ORAL LD50 (RAT) IS UNKNOWN

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: DS2 IS AN ALKALI & WITH DIRECT SKIN CONTACT WILL CORRODE TISSUE. EXPOSURE TO "DETA" CAN CAUSE SKIN SENSITIZATION & ASTHMA; SUFFICIENT EXPOSURE TO "EGME" MAY CAUSE "CNS" DEPRESSION & LIVER DAMAGE. EXPOSURE TO VAPOR CONCENTRATIONS CAN CAUSE RESPIRATORY IRRITATION.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: NOT APPLICABLE

Signs/Symptoms Of Overexp: HEALTH EFFECTS RANGE FROM MILD BURNS & PRIMARY IRRITATION TO CORNEAL OPACIFICATION, SEVERE BURNS, & ESOPHAGEAL STRICTURE. EXPOSURE TO VAPORS CAN CAUSE NAUSEA & VOMITING. ALTHOUGH NOT DEFINITELY ESTABLISHED IN HUMANS, REPRODUCTIVE EFFECTS ARE A MAJOR CONCERN WITH THIS PRODUCT.

Med Cond Aggravated By Exp: PRE-EXISTING RESPIRATORY CONDITIONS.

Emergency/First Aid Proc: SKIN: FLUSH AWAY W/WATER UNTIL "SOAPINESS" IS NO LONGER PRESENT; EYES: IMMEDIATELY FLUSH W/COPIOUS AMTS. OF WATER FOR AT LEAST 15 MINS. IN EITHER CASE, SEEK MEDICAL ATTN.; INHAL: REMOVE TO FRESH AIR -GIVE CPR/O*2 AS SITUATION DICTATES. ADDITIONAL SUPPORTIVE MEASURES MAY BE REQUIRED; INGEST: IF CONSCIOUS, GIVE PATIENT AS MUCH MILK OR WATER AS POSSIBLE. DO NOT INDUCE VOMITING. GET MED. ATTN. IMMED.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: SPILLS ON POROUS SURFACES(CONCRETE, WOOD, ETC.) SHOULD BE CLEANED & NEUTRALIZED IMMEDIATELY. OTHERWISE, IT WILL BE ABSORBED & BECOME AN INDEFINITE HAZARD. CONTAIN SPILL, NEUTRALIZE, ABSORB

ON VERMICULITE, CLAY OR DIATOMACEOUS EARTH. SCOOP UP IN DRUM!

Neutralizing Agent: SODIUM BISULFATE

Waste Disposal Method: CHOICE OF METHOD DEPENDS ON PHYSICAL CONDITION OF WASTE & FACILITY'S CAPABILITY.FOR EXCESS STOCK, COORDINATE W/LOCAL DRMO; OVERSEAS:OPERATE W/IN HOST COUNTRY & DRMO REGS.; WASTE CORROSIVE(PH >12.5) W/EPA HAZ. NO:D002; INCINERATE OR NEUTRALIZE.

Precautions-Handling/Storing: AVOID EXTREME TEMPERATURES (I.E. 160F/71C) DURING STORAGE.

Other Precautions: SPILL/RELEASE PROCEDURE CONTD: SCOOP UP MATERIAL & CONTAMIN. MATTER, PLACE IN EPOXY COATED DRUM W/REMOVABLE HEAD IAW EPA & DOT RQMTS.; DURING CLEAN-UP, WEAR FULL FACE RESPIR. W/ORGANIC VAPOR CARTRIDGE,

ARM-LENGTH RUBBER GLOVES & RUBBER APRON

Control Measures

Respiratory Protection: FOR DS2 AIRBORNE CONC. <5 PPM, USE FULL FACEPIECE & ONE OF THE FOLLOWING: A) CHEM. CARTRIDGE RESP. W/AMINE CARTDGE; B) SUPPL. AIR RESP; C) SUPPL. AIR RESP. IN POSITIVE PRESS. ON CONTIN. FLOW MODE; FOR CONC. >5 PPM OR EMERGENCIES, USE "SCBA"

Ventilation: LOCAL EXHAUST: NECESSARY IF TLV (TWA) EXCEEDED.

Protective Gloves: BUTYL RUBBER: ARM'S LENGTH TYPE

Eye Protection: SPLASHPROOF GOGGLES /FULL FACE SHIELD

Other Protective Equipment: AS REQUIRED FOR TASK AT HAND; CORROSIVE RESISTANT (I.E. RUBBER) GAUNTLET, BOOTS, & APRON.

Work Hygienic Practices: USE MATERIAL I/A/W THE GUIDELINES & INSTRUCTIONS SET FORTH IN USER'S TECH MANUAL.

Suppl. Safety & Health Data:

Transportation Data

Transportation Action Code: Transportation Focal Point: D Trans Data Review Date: 92163

DOT PSN Code: AIP

DOT Proper Shipping Name: ALKALINE (CORROSIVE) LIQUID, N.O.S.

DOT Class: CORROSIVE MATERIAL

DOT Label: CORROSIVE Limited Quantity: NO DOT Mode Indicator:

Identification Number: NA1719
Reportable Qty - Trans File: NO
DOT/DoD Exemption Number: N/R

IMO PSN Code: APB

IMO Proper Shipping Name: ALKALINE CAUSTIC LIQUIDS, N.O.S.

IMO Regulations Page Number: SEE 8136

IMO UN Number: 1719

IMO UN Class: 8

IMO Subsidiary Risk Label: -

IATA PSN Code: FSV

IATA UN ID Number: 1719

IATA Proper Shipping Name: CAUSTIC ALKALI LIQUIDS, N.O.S.

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IATA UN Class: 8
IATA Subsidiary Risk Class:
IATA Label: CORROSIVE
AFR 71-4 PSN Code: ALJ
AFR 71-4 Prop. Shipping Name: ALKALINE (CORROSIVE) LIQUID, N.O.S.
AFR 71-4 Class: CORROSIVE MATERIAL
AFR 71-4 Label: CORROSIVE
AFR 71-4 ID Number: NA1719
AF MMAC Code: NR
Tech Entry NOS Shipping Name: ALKALINE (CORROSIVE) LIQUID, N.O.S.,
CONTAINS DIETHYLENETRIAMINE & SODIUM HYDROXIDE.
Additional Trans Data:
Disposal Data
______
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
Label Required: YES
Date of Technical Review: 11JUN92
Label Date: UNDATED
Manufacturer's Label No.: UNKNOWN
Label Status: D
Common Name of Product: DECONTAMINATING AGENT, DS-2
Chronic Hazard: YES
Signal Word: WARNING!
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate: X
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate: X
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight: X
Fire Hazard-Moderate:
```

Fire Hazard-Severe:

Reactivity Hazard-Moderate:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: CORROSIVE TO TISSUE & HIGHLY IRRITANT TO
RESPIRATORY TRACT; REPEATED EXPOSURE TO "DETA" CAN CAUSE SKIN SENSITIZATION
& ASTHMA; SUFFICIENT EXPOSURE TO "EGME" MAY CAUSE "CNS" DEPRESSION & LIVER
DAMAGE. AVOID EXTREME TEMPERATURES(I.E. 160F/71C) FOR STORAGE! AVOID
CONTACT W/LEAKING LIQUID OR VAPOR. FIRST AID: SKIN: FLUSH AWAY W/WATER
UNTIL "SOAPINESS IS NO LONGER PRESENT; EYES: IMMEDIATELY FLUSH W/COPIOUS
AMTS. OF WATER FOR AT LEAST 15 MINS. IN EITHER CASE, SEEK MEDICAL ATTN.;
INHAL: REMOVE TO FRESH AIR -GIVE CPR/O*2 AS SITUATION DICTATES/ ADDITIONAL
SUPPORTIVE MEASURES MAY BE REQUIRED. INGEST: IF CONSCIOUS, GIVE PATIENT
MILK OR WATER. GET DOCTOR

Protect Eye: X Protect Skin: X

Protect Respiratory: X

Reactivity Hazard-None:

Mfg's Name From Label: POLY RESEARCH CORP

Mfg's Street From Label: 125 CORPORATE DR

Mfg's P.O. Box From Label:

Mfg's City From Label: HOLTSVILLE

Mfg's State From Label: NY

Mfg's Zip Code From Label: 11742

Mfg's Country From Label: US

Emergency Ph. No. From Label: 301-671-4411/301-278-5201

Year Procured:

DOD Hazardous Materials Information System DOD 6050.5-L

AS OF November 1992

FSC: 6840

NIIN: 007535038

Manufacturer's CAGE: 64184

Part No. Indicator: A

Part Number/Trade Name: DIAZINON 2% DUST

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: INSECTICIDE, DIAZINON
Manufacturer's Name: AMJAY CHEMICALS

Manufacturer's Street: 11490 WESTHEIMER SUITE 290

Manufacturer's P. O. Box: 218786

Manufacturer's City: HOUSTON Manufacturer's State: TX

Manufacturer's Country: US

Manufacturer's Zip Code: 77218-8786

Manufacturer's Emerg Ph #: 713-492-2000

Manufacturer's Info Ph #: 713-492-2000

Distributor/Vendor # 1: AMJAY CHEMICALS (713-492-2000)

Distributor/Vendor # 1 Cage: 64184

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 002

Tot Safety Entries This Stk#: 005

Status: SE

Date MSDS Prepared: 14MAY87

Safety Data Review Date: 26DEC91

Supply Item Manager: CX

MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BKBLL

Specification Number: MIL-I-22772

Spec Type, Grade, Class:

Hazard Characteristic Code: T5

Unit Of Issue: CN

Unit Of Issue Container Qty: 1X25 LBS

Type Of Container: PAIL Net Unit Weight: 25 LBS

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NRC/State License Number: N/R
Net Explosive Weight:
Net Propellant Weight-Ammo: N/R
Coast Guard Ammunition Code:
Ingredients/Identity Information
Proprietary: NO
Ingredient: DIAZINON
Ingredient Sequence Number: 01
Percent: 2.0
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: TF3325000
CAS Number: 333-41-5
OSHA PEL: S, 0.1 MG/M3
ACGIH TLV: S, 0.1 MG/M3; 9091
Other Recommended Limit: NONE SPECIFIED
______
               Physical/Chemical Characteristics
______
Appearance And Odor: LIGHT TAN POWDER, MILD CHARACTERISTIC ODOR
Boiling Point: N/R
Melting Point: N/R
Vapor Pressure (MM Hg/70 F): N/R
Vapor Density (Air=1): N/R
Specific Gravity: N/K
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: N/R
Solubility In Water: NEGLIGIBLE
Percent Volatiles By Volume: N/R
Viscosity: N/R
pH: N/R
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY): UNKNOWN
Autoignition Temperature: N/R
Fire and Explosion Hazard Data
Flash Point: N/R
Flash Point Method: N/R
Lower Explosive Limit: N/R
Upper Explosive Limit: N/R
Extinguishing Media: USE WATER FOG, CARBON DIOXIDE, FOAM, OR DRY CHEMICAL.
Special Fire Fighting Proc: WEAR FIRE FIGHTING PROTECTIVE EQUIPMENT AND A
FULL FACED SELF CONTAINED BREATHING APPARATUS. EVACUATE AREA. COOL FIRE
EXPOSED CONTAINERS WITH WATER SPRAY.
Unusual Fire And Expl Hazrds: COMBUSTION OR HEAT OF FIRE MAY PRODUCE
HAZARDOUS DECOMPOSITION PRODUCTS AND VAPORS.
______
                     Reactivity Data
```

Stability: YES

Cond To Avoid (Stability): HIGH HEAT, TEMPERATURES ABOVE 150F

Materials To Avoid: STRONG OXIDIZING AGENTS

Hazardous Decomp Products: CARBON MONOXIDE, CARBON DIOXIDE, DIAZOXON.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT APPLICABLE

Health Hazard Data

LD50-LC50 Mixture: LD50 (ORAL RAT) IS 396 MG/KG

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: ACUTE:INGESTION/INHALATION:HEADACHE, GIDDINESS, BLURRED VISION, WEAKNESS, DIARRHEA, SALIVATION, CONVULSIONS AND NERVOUSNESS, LOSS OF MOTOR CONTROLS. CHRONIC:CHOLINESTERASE INHIBITION AND RESPIRATORY PROBLEMS.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: NONE OF THE COMPOUNDS IN THIS PRODUCT IS LISTED BY IARC, NTP, OR OSHA AS A CARCINOGEN.

Signs/Symptoms Of Overexp: EYE, SKIN & RESPIRATORY TRACT IRRITATION, HEADACHE, GIDDINESS, BLURRED VISION, DIARRHEA, SALIVATION, NERVOUSNESS AND LOSS OF MOTOR FUNCTIONS.

Med Cond Aggravated By Exp: PERSONS WITH A HISTORY OF AILMENTS OR WITH A PRE-EXISTING DISEASE INVOLVING THE EYES, SKIN, CNS OR RESPIRATORY TRACT MAY BE AT INCREASED RISK FROM EXPOSURE.

Emergency/First Aid Proc: INHALATION:REMOVE TO FRESH AIR. RESUSCITATE IF NOT BREATHING. GET MEDICAL ATTENTION. EYES:IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR 15 MINUTES. GET MEDICAL ATTENTION. SKIN:REMOVE CONTAMINATED CLOTHING. WASH WITH SOAP AND WATER. INGESTION:GET IMMEDIATE MEDICAL ATTENTION. DRINK LARGE AMOUNTS OF WATER AND INDUCE VOMITING. ATROPINE IS ANTIDOTAL PROVIDED IT IS USED AS SOON AS POISONING SYMPTOMS APPEAR

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: USE SELF CONTAINED RESPIRATOR. SCOOP UP AND PLACE IN DISPOSAL CONTAINERS.

Neutralizing Agent: NOT APPLICABLE.

Waste Disposal Method: DISPOSAL SHOULD BE MADE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.

Precautions-Handling/Storing: STORE IN A COOL, DRY, WELL VENTILATED AREA. KEEP CONTAINERS TIGHTLY CLOSED WHEN NOT IN USE. PROTECT CONTAINERS FROM PHYSICAL DAMAGE.

Other Precautions: DO NOT TAKE INTERNALLY. DO NOT BREATHE DUST/MIST. AVOID PROLONGED OR REPEATED BREATHING OF DUST/MIST. AVOID CONTACT WITH EYES. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.

Control Measures

Respiratory Protection: IF VENTILATION DOES NOT MAINTAIN INHALATION EXPOSURES BELOW PEL(TLV), USE NIOSH/MSHA APPROVED CHEMICAL CARTRIDGE AND DUST/MIST PRE-FILTER RESPIRATORS AS PER CURRENT 29 CFR 1910.134, INSTRUCTIONS/WARNINGS AND NIOSH-RESPIRATOR SELECTION.

Ventilation: MECHANICAL (GENERAL) ROOM VENTILATION IS NORMALLY ADEQUATE. LOCAL EXHAUST MAY BE REQUIRED IF WORK AREA NOT VENTED.

Protective Gloves: NEOPRENE, NITRILE, PVC OR NATURAL RUBBER

Eye Protection: SAFETY GOGGLES WITH FACE SHIELD

Other Protective Equipment: EYE WASH STATION AND SAFETY SHOWER.

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INDUSTRIAL- TYPE WORK CLOTHING AND APRON AS REQUIRED.
Work Hygienic Practices: OBSERVE GOOD PERSONAL HYGIENE PRACTICES AND
RECOMMENDED PROCEDURES. DO NOT WEAR CONTAMINATED CLOTHING OR FOOTWEAR.
Suppl. Safety & Health Data: AVOID PROLONGED OR REPEATED EXPOSURE. DO NOT
GET ON SKIN OR IN EYES. DO NOT BREATHE DUST OR MISTS.
Transportation Data
______
Transportation Action Code:
Transportation Focal Point: D
Trans Data Review Date:
DOT PSN Code: ELB
DOT Proper Shipping Name: DIAZINON
DOT Class: ORM-A
DOT Label: NONE
Limited Quantity: YES
DOT Mode Indicator: A
Identification Number: NA2783
Reportable Qty - Trans File: NO
DOT/DoD Exemption Number:
IMO PSN Code: LBC
IMO Proper Shipping Name: ORGANOPHOSPHORUS PESTICIDES, SOLID, TOXIC, N.O.S.
IMO Regulations Page Number: 6221
IMO UN Number: 2783
IMO UN Class: 6.1
IMO Subsidiary Risk Label: -
IATA PSN Code: SRJ
IATA UN ID Number: 2783
IATA Proper Shipping Name: ORGANOPHOSPHORUS PESTICIDES, SOLID, TOXIC, N.O.S.
IATA UN Class: 6.1
IATA Subsidiary Risk Class:
IATA Label: POISON
AFR 71-4 PSN Code: HGR
AFR 71-4 Prop. Shipping Name: ORGANOPHOSPHORUS PESTICIDE SOLID N.O.S.
AFR 71-4 Class: POISON B
AFR 71-4 Label: POISON
AFR 71-4 ID Number: UN2783
AF MMAC Code:
Tech Entry NOS Shipping Name: 2.0% DUST OF DIAZINON
Additional Trans Data: RQ FOR DIAZINON IS 1.0 LB
Disposal Data
______
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
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1st EPA Acute Hazard UnUsed: 2nd EPA Haz Wst Code UnUsed: 2nd EPA Haz Wst Name UnUsed: 2nd EPA Haz Wst Char UnUsed:

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2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
______
                             Label Data
______
Label Required: NO *
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: X *
Common Name of Product: LABEL COVERED UNDER EPA REGS - HAZCOM LABEL NOT
AUTHORIZED *
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions:
Protect Eye:
Protect Skin:
Protect Respiratory:
Mfg's Name From Label:
Mfg's Street From Label:
Mfg's P.O. Box From Label:
Mfg's City From Label:
Mfg's State From Label:
Mfg's Zip Code From Label:
Mfg's Country From Label:
Emergency Ph. No. From Label:
Year Procured:
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DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 9130

NIIN: 002568613

Manufacturer's CAGE: 58326

Part No. Indicator: A

Part Number/Trade Name: JP-4

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: TURBINE FUEL, AVIATION, JP-4 F40

Manufacturer's Name: CONOCO INC. Manufacturer's Street: 1000 S PINE

Manufacturer's P. O. Box: 1267

Manufacturer's City: PONCA CITY

Manufacturer's State: OK

Manufacturer's Country: US

Manufacturer's Zip Code: 74603

Manufacturer's Emerg Ph #:

Manufacturer's Info Ph #:

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 027

Tot Safety Entries This Stk#: 039 *

Status: SE

Date MSDS Prepared: 00DEC88

Safety Data Review Date: 06JUL89

Supply Item Manager: KY

MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BGWXS

Specification Number: MIL-T-5624

Spec Type, Grade, Class: GRADE JP-4

Hazard Characteristic Code: F3

Unit Of Issue: GL

Unit Of Issue Container Qty:

Type Of Container: BULK

Net Unit Weight:

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NRC/State License Number: N/R
Net Explosive Weight:
Net Propellant Weight-Ammo: N/R
Coast Guard Ammunition Code:
Ingredients/Identity Information
Proprietary: NO
Ingredient: JET FUEL JP-4 (CONTAINING THE FOLLOWING COMPONENTS)
Ingredient Sequence Number: 01
Percent: 100
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: NY9340000
CAS Number: UNKNOWN
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: USAF 8HR TWA 200 PPM
______
Proprietary: NO
Ingredient: BENZENE (SARA III)
Ingredient Sequence Number: 02
Percent: <1
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: CY1400000
CAS Number: 71-43-2
OSHA PEL: 1PPM/5STEL;1910.1028
ACGIH TLV: 10 PPM; A2; 9192
Other Recommended Limit:
Proprietary: NO
Ingredient: XYLENES (O-,M-,P- ISOMERS) (SARA III)
Ingredient Sequence Number: 03
Percent: <4
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: ZE2100000
CAS Number: 1330-20-7
OSHA PEL: 100 PPM/150 STEL
ACGIH TLV: 100 PPM/150STEL;9192
Other Recommended Limit:
_____
                Physical/Chemical Characteristics
______
Appearance And Odor: CLEAR COLORLESS TO AMBER LIQUID, KEROSENE ODOR.
Boiling Point: 60-518F
Melting Point: N/K
Vapor Pressure (MM Hg/70 F): 75 MM
Vapor Density (Air=1): >1
Specific Gravity: 0.78
Decomposition Temperature: N/K
Evaporation Rate And Ref: N/K
Solubility In Water: NEGLIGIBLE
Percent Volatiles By Volume: 50
Viscosity:
```

pH: N/K

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Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY):
Autoignition Temperature:
```

Fire and Explosion Hazard Data

Flash Point: AS LOW AS -50F Flash Point Method: TCC Lower Explosive Limit: <1 Upper Explosive Limit: 8

Extinguishing Media: FOAM, CARBON DIOXIDE, DRY CHEMICAL, WATER FOG. WATER MAY BE INEFFECTIVE AND MAY SPREAD FIRE IF IMPROPERLY USED.

Special Fire Fighting Proc: USE SELF CONTAINED BREATHING APPARATUS, ESPECIALLY IN ENCLOSED AREAS. WATER SPRAY MAY BE USED TO COOL FIRE EXPOSED CONTAINERS AND EQUIPMENT.

Unusual Fire And Expl Hazrds: VAPORS MAY FORM EXPLOSIVE MIXTURES WITH AIR. SATURATED NEWSPAPER, RAGS, ETC. MAY UNDERGO SPONTANEOUS COMBUSTION.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): HEAT, IGNITION SOURCES.

Materials To Avoid: STRONG OXIDIZERS.

Hazardous Decomp Products: CARBON DIOXIDE, CARBON MONOXIDE.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): N/R

Health Hazard Data

LD50-LC50 Mixture: N/K

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: NO

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: PRODUCT IS A MILD IRRITANT. MOST HAZARDOUS EXPOSURE IS TO AIRBORN MIST OR OTHER ASPIRATION OF LIQUID INTO LUNGS.

PROLONGED/REPEATED OVEREXPOSURE MAY CAUSE LIVER OR KIDNEY DAMAGE.

Carcinogenicity - NTP: YES Carcinogenicity - IARC: YES

Carcinogenicity - OSHA: YES

Explanation Carcinogenicity: API HAS DONE STUDIES INDICATING THAT REPEATED OVER EXPOSURES MAY CAUSE CANCER IN MICE. PRODUCT CONTAINS BENZENE.

Signs/Symptoms Of Overexp: EYE:MILD IRRITATION. SKIN:DRYING, DEFATTING WITH PROLONGED/REPEATED CONTACT. INHALED:HEADACHE, NAUSEA, CONFUSION, DROWSINESS. ASPIRATION OF LIQUID MAY CAUSE CHEMICAL PNEUMONITIS. INGESTED: G/I

IRRITATION, NAUSEA, POSSIBLE VOMITING.

Med Cond Aggravated By Exp: NONE EXPECTED.

Emergency/First Aid Proc: EYE:FLUSH WITH WATER 15 MIN. SKIN:REMOVE CONTAMINATED CLOTHING.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill:

Neutralizing Agent: NONE

Waste Disposal Method: DISPOSE I/A/W FEDERAL, STATE, LOCAL REGULATIONS. INCINERATION IS RECOMMENDED FOR DISPOSAL.

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Precautions-Handling/Storing: STORE IN COOL AREA AWAY FROM OXIDIZERS.
Other Precautions:
------
                       Control Measures
Respiratory Protection: NOT EXPECTED TO BE NECESSARY.
Ventilation: USE LOCAL EXHAUST TO MAINTAIN EXPOSURE BELOW TLV/PEL IF
NORMAL ROOM VENTILATION IS IN SUFFICIENT.
Protective Gloves: RUBBER, PLASTIC OR OTHER IMPERVIOUS.
Eye Protection: SAFETY GLASSES OR SPLASH GOGGLES.
Other Protective Equipment: PROTECTIVE CLOTHING TO PREVENT PROLONGED/
REPEATED CONTACT.
Work Hygienic Practices: USE GOOD INDUSTRIAL HYGIENE PRACTICE. AVOID
UNNECESSARY CONTACT.
Suppl. Safety & Health Data: MSDS NO GASC0180.
------
                      Transportation Data
Transportation Action Code:
Transportation Focal Point: D
Trans Data Review Date: 89187
DOT PSN Code: GNJ
DOT Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE
DOT Class: FLAMMABLE LIQUID
DOT Label: FLAMMABLE LIQUID
Limited Quantity: NO
DOT Mode Indicator:
Identification Number: UN1863
Reportable Qty - Trans File:
DOT/DoD Exemption Number:
IMO PSN Code: HNV
IMO Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE
IMO Regulations Page Number: 3271
IMO UN Number: 1863
IMO UN Class: 3.2
IMO Subsidiary Risk Label: -
IATA PSN Code: MMA
IATA UN ID Number: 1863
IATA Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE
IATA UN Class: 3
IATA Subsidiary Risk Class:
IATA Label: FLAMMABLE LIQUID
AFR 71-4 PSN Code: EOX
AFR 71-4 Prop. Shipping Name: FUEL, AVIATION, TURBINE ENGINE
AFR 71-4 Class: FLAMMABLE LIQUID
AFR 71-4 Label: FLAMMABLE LIQUID
AFR 71-4 ID Number: UN1863
AF MMAC Code:
Tech Entry NOS Shipping Name:
Additional Trans Data:
_____
                        Disposal Data
```

Disposal Data Action Code: Disposal Data Focal Point:

Disposal Data Review Date:

Rec # For This Disp Entry:

```
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
______
                              Label Data
-----
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: E
Common Name of Product:
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: MAY BE POISONOUS IF INHALED OR ABSORBED
THROUGH SKIN. VAPORS MAY CAUSE DIZZINESS OR SUFFOCATION. CONTACT MAY
IRRITATE OR BURN SKIN AND EYES. FIRE MAY PRODUCE IRRITATING OR POISONOUS
GASES. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION.
Protect Eye:
Protect Skin:
Protect Respiratory:
Mfg's Name From Label: CONOCO INC
Mfg's Street From Label: 1000 S PINE
Mfg's P.O. Box From Label: 1267
Mfg's City From Label: PONCA CITY
Mfg's State From Label: OK
```

Mfg's Zip Code From Label: 74603 Mfg's Country From Label: US Emergency Ph. No. From Label: Year Procured:

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 9150

NIIN: 010536688

Manufacturer's CAGE: 07950

Part No. Indicator: A

Part Number/Trade Name: ROYCO 463

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: CLEANER, LUBRICANT AND PRESERVATIVE

Manufacturer's Name: ROYAL LUBRICANTS COMPANY INC.

Manufacturer's Street: 72 EAGLE ROCK AVE

Manufacturer's P. O. Box: 518

Manufacturer's City: EAST HANOVER

Manufacturer's State: NJ

Manufacturer's Country: US

Manufacturer's Zip Code: 07936

Manufacturer's Emerg Ph #: 201-887-7411

Manufacturer's Info Ph #: 201-887-3100

Distributor/Vendor # 1: N/R

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 001

Tot Safety Entries This Stk#: 006

Status: SE

Date MSDS Prepared: 19JUN90

Safety Data Review Date: 180CT91

Supply Item Manager: CX

MSDS Preparer's Name: N/K

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BGJGJ

Specification Number: MIL-L-63460

Spec Type, Grade, Class:

Hazard Characteristic Code: N1

Unit Of Issue: GL

Unit Of Issue Container Qty: 1 GAL

Type Of Container: BOTTLE Net Unit Weight: 7.9 LBS

```
NRC/State License Number: N/R
Net Explosive Weight:
Net Propellant Weight-Ammo: N/R
Coast Guard Ammunition Code:
Ingredients/Identity Information
______
Proprietary: NO
Ingredient: BARIUM PETROLEUM SULFONATE
Ingredient Sequence Number: 01
Percent: 15 - 25
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1000620BP
CAS Number: UNKNOWN
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED
Proprietary: NO
Ingredient: 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113) (SARA III)
Ingredient Sequence Number: 02
Percent: 5-15
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: KJ4000000
CAS Number: 76-13-1
OSHA PEL: 1000PPM/1250STEL
ACGIH TLV: 1000PPM/1250STEL9192
Other Recommended Limit: NONE SPECIFIED
-----
Proprietary: NO
Ingredient: DECENE DIMER HYDROGENATED 1 (MFR CAS # 68649-11-6)
Ingredient Sequence Number: 03
Percent: 10 - 20
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1005744DD
CAS Number: UNKNOWN
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED
-----
Proprietary: NO
Ingredient: RESIDUAL OILS, HYDROTREATED
Ingredient Sequence Number: 04
Percent: 5 - 15
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1003242SR
CAS Number: 64742-57-0
OSHA PEL: 5 MG/M3 (OIL MIST)
ACGIH TLV: 5 MG/M3 (OIL MIST)
Other Recommended Limit: NONE SPECIFIED
-----
```

Proprietary: NO
Ingredient: METHYL CHLOROFORM (1,1,1-TRICHLOROEHANE) (SARA III)

```
Ingredient Sequence Number: 05
Percent: 5 - 15
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: KJ2975000
CAS Number: 71-55-6
OSHA PEL: 350 PPM/450 STEL
ACGIH TLV: 350 PPM/450STEL;9192
Other Recommended Limit: NONE SPECIFIED
-----
Proprietary: NO
Ingredient: ADDITIVES AND OTHER INGREDIENTS
Ingredient Sequence Number: 06
Percent: 10 - 30
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1003746AD
CAS Number: UNKNOWN
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED
-----
Proprietary: NO
Ingredient: DIMETHYLFORMAMIDE
Ingredient Sequence Number: 07
Percent: <2
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: LQ2100000
CAS Number: 68-12-2
OSHA PEL: S, 10 PPM
ACGIH TLV: S, 10 PPM; 9192
Other Recommended Limit: NONE SPECIFIED
Physical/Chemical Characteristics
Appearance And Odor: CLOUDY BROWN FLUID WITH STRONG ODOR
Boiling Point: UNKNOWN
Melting Point: UNKNOWN
Vapor Pressure (MM Hg/70 F): UNKNOWN
Vapor Density (Air=1): UNKNOWN
Specific Gravity: 0.95
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: UNKNOWN
Solubility In Water: NEGLIGIBLE
Percent Volatiles By Volume: N/K
Viscosity:
pH: N/R
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY): UNKNOWN
```

Autoignition Temperature: N/K

Fire and Explosion Hazard Data

Flash Point: 250F,121C Flash Point Method: COC

Lower Explosive Limit: UNKNOWN Upper Explosive Limit: UNKNOWN

Extinguishing Media: USE WATER FOG, CARBON DIOXIDE, DRY CHEMICAL.DO NOT USE A DIRECT STREAM OF WATER.PRODUCT WILL FLOAT AND CAN BE REIGNITED. Special Fire Fighting Proc: WATER SPRAY MAY BE USEFUL IN CONTAINERS EXPOSED TO FLAMES.DO NOT ENTER CONFINED FIRE SPACE WITHOUT PROPER PROTECTIVE EQUIPMENT INCLUDING NIOSH APPROVED SCBA.

Unusual Fire And Expl Hazrds: HYDROGEN CHLORIDE, A CORROSIVE AND TOXIC GAS, MAY BE RELEASED UPON COMBUSTION

Reactivity Data

Stability: YES

Cond To Avoid (Stability): AVOID HEAT AND OPEN FLAMES.

Materials To Avoid: STRONG OXIDIZING AGENTS

Hazardous Decomp Products: A COMPLEX MIXTURE OF AIRBORNE SOLID, LIQUID, PARTICULATE & GASES, CARBON MONOXIDE, & OTHER UNIDENTIFIED ORGANIC COMPOUNDS

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT APPLICABLE

Health Hazard Data

LD50-LC50 Mixture: LD50 (ORAL RAT) IS NOT AVAILABLE

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: NO

Health Haz Acute And Chronic: ACUTE-EYES: IRRITATION.SKIN: MODERATELY IRRITATING.PROLONGED/REPEATED CONTACT MAY CAUSE DERMATITIS. IF ABSORBED MAY CAUSE LIVER DAMAGE.INHALATION: VAPORS/MISTS WILL BE IRRITATING.HIGH CONCENTRATION MAY CAUSE CNS DEPRESSION & CARDIAC EFFECTS.INGESTION: VOMITING.CHRONIC: NONE GIVEN.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: N/R

Signs/Symptoms Of Overexp: IRRITATION AS NOTED ABOVE.EARLY TO MODERATE CNS DEPRESSION MAY BE EVIDENCED BY GIDDINESS, HEADACHE, DIZZINESS & NAUSEA; IN EXTREME CASES, UNCONSCIOUSNESS, RESPIRATORY DEPRESSION & DEATH MAY OCCUR. ASPIRATION PNEUMONITIS MAY BE EVIDENCED BY COUGHING, LABORED BREATHING & CYANOSIS; IN SEVERE CASES DEATH MAY OCCUR. JAUNDICE.

Med Cond Aggravated By Exp: PREEXISTING EYE, SKIN AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

Emergency/First Aid Proc: GET MEDICAL ATTENTION.INHALATION:REMOVE TO FRESH AIR.GIVE CPR/OXYGEN IF NEEDED.INGESTION:DON'T INDUCE VOMITING.IF VOMITING OCCURS, KEEP HEAD BELOW HIPS.EYE:FLUSH WITH WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN.SKIN:WIPE EXCESS.FLUSH WITH WATER.WASH WITH SOAP & WATER.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: WEAR RESPIRATOR & PROTECTIVE CLOTHING.DIKE & CONTAIN.REMOVE WITH VACUUM TRUCKS/PUMP TO STORAGE/SALVAGE VESSELS.SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND/OTHER SUITABLE MATERIAL.FLUSH AREA WITH WATER.TAKE UP SMALL SPILLS WITH ABSORBENTS.

Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.

Waste Disposal Method: DISPOSE OF AS HAZARDOUS WASTE DOOD BASED ON BARIUM CONTENT UNLESS EXTRACTION RESULTS ARE LESS THAN EPA LIMIT. THIS IS AN OIL CONTAINING HAZARDOUS MATERIAL. SPILLS INTO/LEADING TO WATERS THAT CAUSE A SHEEN MUST BE REPORTED (800-424-8802).

Precautions-Handling/Storing: STORE IN A COOL, DRY, VENTILATED PLACE. KEEP AWAY FROM OPEN FLAMES & HIGH TEMPERATURES.

Other Precautions: MINIMIZE SKIN CONTACT. WASH WITH SOAP & WATER BEFORE EATING, DRINKING, SMOKING OR USING TOILET FACILITIES. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE. PROPERLY DISPOSE OF CONTAMINATED LEATHER ARTICLES (SHOES) THAT CAN NOT BE DECONTAMINATED.

Control Measures

Pegniratory Protection, IE EVENIBE EVENEDS OCCUPANIONAL LIVING MED 2

Respiratory Protection: IF EXPOSURE EXCEEDS OCCUPATIONAL LIMITS, USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE.IN ACCORD WITH 29 CFR 1910.134 USE EITHER A FULL-FACE, ATMOSPHERE-SUPPLYING RESPIRATOR OR AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS/PARTICULATE

Ventilation: WORK IN A WELL VENTILATED AREA.

Protective Gloves: NITRILES

Eye Protection: CHEMICAL GOGGLES

Other Protective Equipment: EYE WASH STATION AND SAFETY SHOWER. INDUSTRIAL-TYPE WORK CLOTHING AND APRON AS REQUIRED.USE VENTILATION TO CONTROL VAPOR

Work Hygienic Practices: OBSERVE GOOD PERSONAL HYGIENE PRACTICES AND RECOMMENDED PROCEDURES. DO NOT WEAR CONTAMINATED CLOTHING OR FOOTWEAR. Suppl. Safety & Health Data: NOTE TO PHYSICIAN: IF MORE THAN 2.0 ML/KG HAS BEEN INGESTED & VOMITING HAS NOT OCCURRED, EMESIS SHOULD BE INDUCED WITH SUPERVISION.KEEP VICTIM'S HEAD BELOW HIPS TO PREVENT ASPIRATION. IF SYMPTOMS SUCH AS LOSS OF GAG REFLEX, CONVULSION/UNCONSCIOUSNESS OCCUR BEFORE EMESIS, USE GASTRIC LAVAGE WITH A CUFFED ENDOTRACHEAL TUBE.

Transportation Data

Transportation Action Code:

Transportation Focal Point: D

Trans Data Review Date: 91291

DOT PSN Code: GYH

DOT Proper Shipping Name: HAZARDOUS SUBSTANCE, LIQUID OR SOLID, N.O.S. OR

ORM-E, LIQUID OR SOLID, N.O.S.

DOT Class: ORM-E DOT Label: NONE

Limited Quantity: YES

DOT Mode Indicator:

Identification Number: NA9188
Reportable Qty - Trans File: NO

DOT/DoD Exemption Number:

IMO PSN Code: ZZZ

IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION

IMO Regulations Page Number: N/R

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IMO UN Number: N/R
IMO UN Class: N/R
IMO Subsidiary Risk Label: N/R
IATA PSN Code: ZZZ
IATA UN ID Number: N/R
IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
IATA UN Class: N/R
IATA Subsidiary Risk Class: N/R
IATA Label: N/R
AFR 71-4 PSN Code: EWN
AFR 71-4 Prop. Shipping Name: HAZARDOUS SUBSTANCE, LIQUID OR SOLID, N.O.S.
AFR 71-4 Class: ORM-E
AFR 71-4 Label: NONE
AFR 71-4 ID Number: NA9188
AF MMAC Code:
Tech Entry NOS Shipping Name: 1,1,1-TRICHLOROETHANE(5-15%),
DIMETHYLFORMAMIDE (<2%)
Additional Trans Data: RQ FOR 1,1,1-TRICHLOROETHANE IS 1,000 LBS.
_____
                          Disposal Data
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
Label Required: YES
Date of Technical Review: 10SEP92 *
Label Date: 17NOV89
Manufacturer's Label No.: UNKNOWN
Label Status: C
Common Name of Product: ROYCO 463
Chronic Hazard: N/K
Signal Word: WARNING!
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate: X *
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
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Contact Hazard-Moderate: X *
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight: X
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None: X
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: ACUTE-EYES: IRRITATION. SKIN: MODERATELY
IRRITATING.PROLONGED/REPEATED CONTACT MAY CAUSE DERMATITIS. IF ABSORBED MAY
CAUSE LIVER DAMAGE.INHALATION: VAPORS/MISTS WILL BE IRRITATING.HIGH
CONCENTRATION MAY CAUSE CNS DEPRESSION & CARDIAC EFFECTS.INGESTION:
VOMITING. CHRONIC: NONE GIVEN. STORAGE-STORE IN A COOL, DRY, VENTILATED PLACE.
KEEP AWAY FROM OPEN FLAMES & HIGH TEMPERATURES. FIRST AID: GET MEDICAL
ATTENTION.INHALATION: REMOVE TO FRESH AIR.GIVE CPR/OXYGEN IF NEEDED.
INGESTION: DON'T INDUCE VOMITING. IF VOMITING OCCURS, KEEP HEAD BELOW HIPS.
EYE: FLUSH WITH WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN.SKIN: WIPE
EXCESS.FLUSH WITH WATER.WASH WITH SOAP & WATER
Protect Eye: X
Protect Skin: X
Protect Respiratory: X
Mfg's Name From Label: ROYAL LUBRICANTS COMPANY INC.
Mfg's Street From Label:
Mfg's P.O. Box From Label: 518
Mfg's City From Label: EAST HANOVER
Mfg's State From Label: NJ
Mfg's Zip Code From Label: 07936
Mfg's Country From Label: US
```

Emergency Ph. No. From Label: 201-887-7411/800-424-9300(CHEMTREC)

Year Procured: 1992 *

DOD Hazardous Materials Information System DOD 6050.5-L

AS OF November 1992

FSC: 6830

NIIN: 002813464

Manufacturer's CAGE: 36346

Part No. Indicator: A

Part Number/Trade Name: CHLORINE

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: CHLORINE, TECHNICAL

Manufacturer's Name: UNION CARBIDE CORP; LINDE DIV

Manufacturer's Street: 39 OLD RIDGEBURY ROAD

Manufacturer's P. O. Box: N/K

Manufacturer's City: DANBURY

Manufacturer's State: CT

Manufacturer's Country: US

Manufacturer's Zip Code: 06817-0001

Manufacturer's Emerg Ph #: 800-822-4357

Manufacturer's Info Ph #: 800-822-4357

Distributor/Vendor # 1: N/R

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 004

Tot Safety Entries This Stk#: 006

Status:

Date MSDS Prepared: 01NOV85

Safety Data Review Date: 10MAY88

Supply Item Manager: CX

MSDS Preparer's Name: N/K

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BDSXX

Specification Number: BB-C-120

Spec Type, Grade, Class: N/K

Hazard Characteristic Code: G7

Unit Of Issue: CY

Unit Of Issue Container Qty: 150.0 LBS

Type Of Container: CYLINDER Net Unit Weight: 150.0 LBS

```
NRC/State License Number: N/R
Net Explosive Weight:
Net Propellant Weight-Ammo: N/R
Coast Guard Ammunition Code:
______
               Ingredients/Identity Information
Proprietary: NO
Ingredient: CHLORINE (SARA III)
Ingredient Sequence Number: 01
Percent: 100.0
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: FO2100000
CAS Number: 7782-50-5
OSHA PEL: 0.5 PPM/1 STEL
ACGIH TLV: 0.5 PPM/1 STEL; 9192
Other Recommended Limit: N/R
------
               Physical/Chemical Characteristics
------
Appearance And Odor: GREENISH-YELLOW GAS; PUNGENT IRRITATING CHOKING ODOR.
Boiling Point: -29.3F/-34C
Melting Point: N/K
Vapor Pressure (MM Hg/70 F): 85.3 PSIG
Vapor Density (Air=1): 2.49
Specific Gravity: 1.41
Decomposition Temperature: N/K
Evaporation Rate And Ref: HIGH (BUTYL ACETATE=1)
Solubility In Water: SLIGHT
Percent Volatiles By Volume: 100
Viscosity:
pH: N/K
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY): N/K
Autoignition Temperature: N/K
Fire and Explosion Hazard Data
------
Flash Point: NONE
Flash Point Method: N/K
Lower Explosive Limit: N/K
Upper Explosive Limit: N/K
Extinguishing Media: USE MEDIA APPROPRIATE FOR SURROUNDING FIRE.
Special Fire Fighting Proc: EVACUATE ALL PERSONNEL FROM DANGER AREA.USE
NIOSH/MSHA APPROVED SCBA IN AN ENCLOSED AREA WITH FULL PROTECTION.
Unusual Fire And Expl Hazrds: OXIDIZING AGENT; MAY ACCELERATE COMBUSTION.
CONTACT WITH FLAMMABLE MATERIAL MAY CAUSE FIRE OR EXPLOSION.
-----
                      Reactivity Data
______
Stability: YES
```

Cond To Avoid (Stability): OIL, GREASE FLAMMABLE MATERIALS. EXTREME HEAT. Materials To Avoid: METALS, AL, CU & BRASS, REDUCING AGENTS. Hazardous Decomp Products: BURNING MAY PRODUCE TOXIC FUMES OF CHLORIDES. Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT KNOWN

Health Hazard Data

LD50-LC50 Mixture: N/K

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: N/K

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: ACUTE: EYES SEVERE INFLAMMATION OF THE CONJUNCTIVA, LENS INJURY.SKIN: SEVERE IRRITATION, CHEMICAL BURNS, SCARRING, DERMATITIS. INHALATION: IRRITATING TO EYES, RESPIRATORY TRACT, ASPHYXIANT AT HIGH CONCENTRATIONS, CHOKING, MAY BE DEATH, PULMONARY EDEMA. CHRONIC: LUNG DYSFUNCTION; CORROSION OF TEETH.

Carcinogenicity - NTP: N/K Carcinogenicity - IARC: N/K

Carcinogenicity - OSHA: N/K

Explanation Carcinogenicity: N/R

Signs/Symptoms Of Overexp: SEE HEALTH HAZARDS DATA.

Med Cond Aggravated By Exp: PRE-EXISTING CONDITIONS MAY BE WORSEN.
Emergency/First Aid Proc: SKIN:FLUSH WITH PLENTY OF WATER FOR 15
MINUTES.CALL A PHYSICIAN. INHALATION:REMOVE TO FRESH AIR, CALL A PHYSICIAN
AT ONCE. EYES:FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, CALL
A PHYSICIAN IMMEDIATELY.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: USE PROPER PERSONAL PROTECTION (NIOSH/MSHA

APPROVED SCBA) IMMEDIATELY EVACUATE ALL PERSONNEL FROM DANGER AREA. Neutralizing Agent: N/R

Waste Disposal Method: KEEP PERSONNEL AWAY: DISPOSAL MUST BE IN COMPLIANCE WITH LOCAL, STATE AND LOCAL REGULATIONS.

Precautions-Handling/Storing: NEVER WORK ON PRESSURIZED SYSTEM.IF THERE IS A LEAK, CLOSE THE CYLINDER VALVE, BLOW DOWN THE SYSTEM BY VENTING TO A SAFE PLACE, THEN REPAIR THE LEAK.

Other Precautions:

Control Measures

Respiratory Protection: USE NIOSH/MSHA APPROVED RESPIRATOR FOR CHLORINE OR

SCBA IF ABOVE TLV/PEL.

Ventilation: USE ONLY IN CLOSED SYSTEM. CORROSION RESISTANT FORCED DRAFT

FUME HOOD IS PREFERRED.
Protective Gloves: NEOPRENE RUBBER.

Eye Protection: CHEMICAL SAFETY GOGGLES.

Other Protective Equipment: FULL SKIN, EYES AND RESPIRATORY PROTECTION. Work Hygienic Practices: AVOID CONTACT WITH SKIN AND EYES; DO NOT BREATHE VAPORS/MIST.

Suppl. Safety & Health Data: MSDS RECEIVED BY DGSC-SLM: APRIL 15,1988.

Transportation Data

Transportation Action Code:
Transportation Focal Point: D

Trans Data Review Date:

DOT PSN Code: DDV

DOT Proper Shipping Name: CHLORINE

```
DOT Class: NONFLAMMABLE GAS
DOT Label: NONFLAMMABLE GAS AND POISON
Limited Quantity:
DOT Mode Indicator: +
Identification Number: UN1017
Reportable Qty - Trans File:
DOT/DoD Exemption Number:
IMO PSN Code: DYX
IMO Proper Shipping Name: CHLORINE
IMO Regulations Page Number: 2116
IMO UN Number: 1017
IMO UN Class: 2(2.3)
IMO Subsidiary Risk Label:
IATA PSN Code: ZZY
IATA UN ID Number: N/R
IATA Proper Shipping Name: FORBIDDEN BY THIS MODE OF TRANSPORTATION
IATA UN Class: N/R
IATA Subsidiary Risk Class: N/R
IATA Label: N/R
AFR 71-4 PSN Code: CMD
AFR 71-4 Prop. Shipping Name: CHLORINE
AFR 71-4 Class: NONFLAMMABLE GAS
AFR 71-4 Label: NONFLAMMABLE GAS AND POISON
AFR 71-4 ID Number: UN1017
AF MMAC Code:
Tech Entry NOS Shipping Name:
Additional Trans Data:
______
                          Disposal Data
______
Disposal Data Action Code:
Disposal Data Focal Point: E
Disposal Data Review Date: 89023
Rec # For This Disp Entry: 02
Tot Disp Entries This Stock#: 004
Landfill Ban Item:
Disposal Supplemental Data: MSDS RECEIVED BY DGSC-SLM: APRIL 15,1988. IN
CASE OF ACCIDENTAL EXPOSURE OR DISCHARGE, CONSULT HEALTH AND SAFETY FILE
FOR PRECAUTIONS.
1st EPA Haz Wst Code UnUsed: D001
1st EPA Haz Wst Name UnUsed: IGNITIBLE
1st EPA Haz Wst Char UnUsed: IGNITABILITY
1st EPA Acute Hazard UnUsed: NO
2nd EPA Haz Wst Code UnUsed: D002
2nd EPA Haz Wst Name UnUsed: CORROSIVE
2nd EPA Haz Wst Char UnUsed: CORROSIVITY
2nd EPA Acute Hazard UnUsed: NO
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
______
                           Label Data
______
```

Label Required: YES

Date of Technical Review:

Label Date:

```
Manufacturer's Label No .:
Label Status: E
Common Name of Product:
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: POISONOUS; MAY BE FATAL IF INHALED. CONTACT
MAY CAUSE BURNS TO SKIN AND EYES. CONTACT WITH LIQUID MAY CAUSE FROSTBITE.
RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION.
Protect Eye:
Protect Skin:
Protect Respiratory:
Mfg's Name From Label: UNION CARBIDE CORP., LINDE DIV.
Mfg's Street From Label: 39 OLD RIDGEBURY RD
Mfg's P.O. Box From Label:
Mfg's City From Label: DANBURY
Mfg's State From Label: CT
Mfg's Zip Code From Label: 06817-0001
Mfg's Country From Label: US
Emergency Ph. No. From Label: 304-744-3487
Year Procured:
```

DOD Hazardous Materials Information System DOD 6050.5-L

AS OF November 1992

FSC: 6850

NIIN: 001428840

Manufacturer's CAGE: 37676

Part No. Indicator: A 5KO Part Number/Trade Name: SKC-NF/ZC-7 CLEANER/REMOVER(PER 6/88)

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: INSPECTION PENETRANT REMOVER Manufacturer's Name: MAGNAFLUX CORP.

Manufacturer's Street: 7300 WEST LAWRENCE AVENUE

Manufacturer's P. O. Box:

Manufacturer's City: CHICAGO

Manufacturer's State: IL

Manufacturer's Country: US

Manufacturer's Zip Code: 60656-3504

Manufacturer's Emerg Ph #: 312-867-8000

Manufacturer's Info Ph #: 312-867-8000

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 007

Tot Safety Entries This Stk#: 015

Status: SE

Date MSDS Prepared: 290CT84

Safety Data Review Date: 180CT88

Supply Item Manager: CX

MSDS Preparer's Name: BRUCE C. GRAHAM

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BDBRH

Specification Number: MIL-I-25135, REV C

Spec Type, Grade, Class: GROUP IA/VII

Hazard Characteristic Code: J7

Unit Of Issue: CN

Unit Of Issue Container Qty: 12 OZ

Type Of Container: AEROSOL CAN

Net Unit Weight: 12 OZ

9-1402 Cans 9-1402 cans

```
TRC/State License Number:
Net Explosive Weight:
Net Propellant Weight-Ammo:
Coast Guard Ammunition Code:
Ingredients/Identity Information
Proprietary: NO
Ingredient: METHYL CHLOROFORM (1,1,1-TRICHLOROEHANE) (SARA III)
Ingredient Sequence Number: 01
Percent: 97.0
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: KJ2975000
CAS Number: 71-55-6
OSHA PEL: 350 PPM/450 STEL
ACGIH TLV: 350 PPM/450STEL;9192
Other Recommended Limit:
_____
Proprietary: NO
Ingredient: CARBON DIOXIDE
Ingredient Sequence Number: 02
Percent: 03.0
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: FF6400000
CAS Number: 124-38-9
OSHA PEL: 10000PPM/30000STEL
ACGIH TLV: 5000PPM/30000STEL;92
Other Recommended Limit:
Physical/Chemical Characteristics
Appearance And Odor: COLORLESS, CLEAR LIQUID, SWEET ODOR
Boiling Point: 165F/74C
Melting Point:
Vapor Pressure (MM Hg/70 F): 230
Vapor Density (Air=1): 4-5
Specific Gravity: 1.3
Decomposition Temperature:
Evaporation Rate And Ref: 5 (ETHER=1)
Solubility In Water: NEG
Percent Volatiles By Volume: 100
Viscosity:
pH:
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY):
Autoignition Temperature:
_____
               Fire and Explosion Hazard Data
Flash Point: N/R-AEROSOL
Flash Point Method:
```

Lower Explosive Limit: N/A Upper Explosive Limit: N/A Extinguishing Media: NONE

Special Fire Fighting Proc: USE WATER SPRAY TO COOL EXPOSED AEROSOL CANS. Unusual Fire And Expl Hazrds: CANS MAY BURST ABOVE 120F. TOXIC GASES SUCH AS HCL, PHOSGENE, CHLORINE. CAN FORM AT HIGH TEMP

Reactivity Data

Stability: YES

Cond To Avoid (Stability): HEAT & IGNITION SOURCES.

Materials To Avoid: ALKALAI METALS, WATER

Hazardous Decomp Products: PHOSGENE, HCI, TRACE CL

Hazardous Poly Occur: NO

Conditions To Avoid (Poly):

Health Hazard Data

LD50-LC50 Mixture:

Route Of Entry - Inhalation:

Route Of Entry - Skin:

Route Of Entry - Ingestion:

Health Haz Acute And Chronic:

Carcinogenicity - NTP:

Carcinogenicity - IARC:

Carcinogenicity - OSHA:

Explanation Carcinogenicity:

Signs/Symptoms Of Overexp: EYE: IRRT. SKN: IRRT. INHL: DIZZ, HEAD, ATAXIA,

LIGHTHEAD, LOSS CONSC, RESP ARREST. INGEST: IRRT, NAUS, DIARR.

Med Cond Aggravated By Exp:

Emergency/First Aid Proc: INHAL:RMV TO FRESH AIR. IF NOT BRTHNG GIVE CPR; IF BRTHNG DIFF GIVE OXYGEN. EYE:IMMED FLUSH W/PLENTY OF WATER. SKIN: WASH W/SOAP&WATER. RMV CONTAM CLTHG&SHOES. INGEST:INDUCE VOMIT. RPT UNTIL VOMIT IS CLEAR. NOTHG BY MOUTH IF UNCONSC. GET MEDICAL ATTN.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: ALLOW SPILL TO EVAPORATE.REMOVE ALL HEAT-IGNITION SOURCES.USE ABSORBENT FOR RESIDUE & PLACE IN CLOSED CONTAINERS Neutralizing Agent:

Waste Disposal Method: DO NOT INCINERATE. USE APPROVED LANDFILL OR AEROSOL DISPOSAL FACILITY IAW ALL LAWS & REGS

Precautions-Handling/Storing: STORE IN COOL, DRY AREA AWAY FROM HEAT SOURCES. AVOID SKN, EYE CONTACT. AVOID INHL VAPORS.

Other Precautions:

Control Measures

Respiratory Protection: USE SAPP RESP IN CONFINED AREA.

Ventilation: SPRAY BOOTH PREFERRED

Protective Gloves: NONE

Eye Protection: NONE

Other Protective Equipment: NONE

Work Hygienic Practices:

Suppl. Safety & Health Data: ENTRY PER NON-OSHA MSDS 290CT84; TRADE NAME, P/N:SKC-NF/ZC-7 CLEANER(AEROSOL).THIS DATA IS OF OLD FORMULATION.MIL-I-25135C, GROUP IA & VII APPLIED I/A/W QPL-25135-13; SEE PNI-B, THIS NSN, FOR NEW PRODUCT FORMULATION.

Transportation Data

Transportation Action Code: Transportation Focal Point: D Trans Data Review Date: 88292

DOT PSN Code: DTF

DOT Proper Shipping Name: COMPRESSED GAS, N.O.S.

DOT Class: NONFLAMMABLE GAS DOT Label: NONFLAMMABLE GAS Limited Quantity: YES

DOT Mode Indicator:

Identification Number: UN1956 Reportable Qty - Trans File: DOT/DoD Exemption Number:

IMO PSN Code: AKH

IMO Proper Shipping Name: AEROSOLS/AEROSOL PRODUCT

IMO Regulations Page Number: SEE 9022

IMO UN Number: 1950 IMO UN Class: 9

IMO Subsidiary Risk Label:

IATA PSN Code: ANB

IATA UN ID Number: 1950
IATA Proper Shipping Name: AEROSOLS, NON-FLAMMABLE, N.O.S.

IATA UN Class: 2

IATA Subsidiary Risk Class: - IATA Label: NON-FLAMMABLE GAS

AFR 71-4 PSN Code: CZF

AFR 71-4 Prop. Shipping Name: COMPRESSED GAS, N.O.S.

AFR 71-4 Class: NONFLAMMABLE GAS AFR 71-4 Label: NONFLAMMABLE GAS

AFR 71-4 ID Number: UN1956

AF MMAC Code:

Tech Entry NOS Shipping Name: CONTAINS CARBON DIOXIDE AS PROPELLANT.

Additional Trans Data: SHIPPING INFO PER MFR.

Disposal Data

Disposal Data Action Code: Disposal Data Focal Point: E Disposal Data Review Date: 89107 Rec # For This Disp Entry: 04 Tot Disp Entries This Stock#: 006

Landfill Ban Item:

Disposal Supplemental Data: 7ENTRY PER NON-OSHA MSDS 29OCT84; TRADE NAME, P/N:SKC-NF/ZC-7 CLEANER(AEROSOL). THIS DATA IS OF OLD FORMULATION. MIL-I-25135C, GROUP IA & VII APPLIED I/A/W QPL-25135-13; SEE PNI-B, THIS NSN, FOR NEW IN CASE OF ACCIDENTAL EXPOSURE OR DISCHARGE, CONSULT HEALTH AND SAFETY FILE FOR PRECAUTIONS.

1st EPA Haz Wst Code UnUsed: U226

1st EPA Haz Wst Name Unused: 1,1,1-TRICHLOROETHANE; METHYLCHLOROFORM

1st EPA Haz Wst Char UnUsed: TOXIC (T)

1st EPA Acute Hazard UnUsed: NO

2nd EPA Haz Wst Code UnUsed:

2nd EPA Haz Wst Name UnUsed:

2nd EPA Haz Wst Char UnUsed:

2nd EPA Acute Hazard UnUsed:

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3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
______
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: E
Common Name of Product:
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: VAPORS MAY CAUSE DIZZINESS OR SUFFOCATION.
CONTACT WITH LIQUID MAY CAUSE FROSTBITE. FIRE MAY PRODUCE IRRITATING OR
POISONOUS GASES.
Protect Eye:
Protect Skin:
Protect Respiratory:
Mfg's Name From Label: MAGNAFLUX CORPORATION
Mfg's Street From Label: 7300 W LAWRENCE AVE
Mfg's P.O. Box From Label:
```

Mfg's City From Label: CHICAGO Mfg's State From Label: IL

Mfg's Country From Label: US

Year Procured:

Mfg's Zip Code From Label: 60656-3504

Emergency Ph. No. From Label: 312-867-8000

DOD Hazardous Materials Information System DOD 6050.5-L

AS OF November 1992

FSC: 9130

NIIN: 001487103

Manufacturer's CAGE: OGYU1

Part No. Indicator: A Part Number/Trade Name: GASOLINE General Information ______ Item Name: GASOLINE, AUTOMOTIVE Manufacturer's Name: LOUIS DREYFUS ENERGY CORP Manufacturer's Street: 5 LAKE FANNY ROAD Manufacturer's P. O. Box: 111 Manufacturer's City: BEL AIR Manufacturer's State: MD Manufacturer's Country: US Manufacturer's Zip Code: 21014 Manufacturer's Emerg Ph #: 800-368-4646 Manufacturer's Info Ph #: 301-879-4315 OR 800-343-1283 Distributor/Vendor # 1: Distributor/Vendor # 1 Cage: Distributor/Vendor # 2: Distributor/Vendor # 2 Cage: Distributor/Vendor # 3: Distributor/Vendor # 3 Cage: Distributor/Vendor # 4: Distributor/Vendor # 4 Cage: Safety Data Action Code: Safety Focal Point: D Record No. For Safety Entry: 008 Tot Safety Entries This Stk#: 058 * Status: SE

Date MSDS Prepared: 01MAY86 Safety Data Review Date: 30SEP91

Supply Item Manager: KY MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City: Preparer's State: Preparer's Zip Code: Other MSDS Number: MSDS Serial Number: BKSHR

Specification Number: VV-G-1690

Spec Type, Grade, Class: N/R Hazard Characteristic Code: F2

Unit Of Issue: GL

Unit Of Issue Container Qty:

Type Of Container: BULK

Net Unit Weight:

NRC/State License Number: N/R

Net Explosive Weight: N/R

Net Propellant Weight-Ammo: N/R Coast Guard Ammunition Code: N/R

Ingredients/Identity Information

Proprietary: NO

Ingredient: BENZENE (SARA III)
Ingredient Sequence Number: 01

Percent: UP TO 2

Ingredient Action Code: Ingredient Focal Point: D

NIOSH (RTECS) Number: CY1400000

CAS Number: 71-43-2

OSHA PEL: 1PPM/5STEL;1910.1028 ACGIH TLV: 10 PPM; A2; 9192

Other Recommended Limit: NONE SPECIFIED

Proprietary: NO

Ingredient: TOLUENE (SARA III)
Ingredient Sequence Number: 02

Percent: UP TO 3

Ingredient Action Code:
Ingredient Focal Point: D

NIOSH (RTECS) Number: XS5250000

CAS Number: 108-88-3 OSHA PEL: 50 PPM; 9293 ACGIH TLV: 100 PPM/150 STEL

Other Recommended Limit: NONE SPECIFIED

Proprietary: NO

Ingredient: XYLENES (O-,M-,P- ISOMERS) (SARA III)

Ingredient Sequence Number: 03

Percent: UP TO 5

Ingredient Action Code: Ingredient Focal Point: D

NIOSH (RTECS) Number: ZE2100000

CAS Number: 1330-20-7
OSHA PEL: 100 PPM/150 STEL
ACGIH TLV: 100 PPM/150STEL;9192

Other Recommended Limit: NONE SPECIFIED

Proprietary: NO

Ingredient: TETRETHYL LEAD
Ingredient Sequence Number: 04

Percent: 0.1

Ingredient Action Code: Ingredient Focal Point: D

NIOSH (RTECS) Number: 1007066TL

CAS Number: UNKNOWN

OSHA PEL: .075 MG/M3 (SKIN)

ACGIH TLV: .1 MG/M3

Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: GASOLINE

Ingredient Sequence Number: 05

Percent: 100

Ingredient Action Code: Ingredient Focal Point: D

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NIOSH (RTECS) Number: LX3300000
CAS Number: 8006-61-9
OSHA PEL: 300 PPM/500 STEL
ACGIH TLV: 300 PPM/500STEL;9192
Other Recommended Limit: NONE SPECIFIED
-----
                Physical/Chemical Characteristics
Appearance And Odor: CLEAR, STRAW COLORES BRONZE, OR PINKISH IN COLOR.
GASOLINE.
Boiling Point: 70.0F,21.1C
Melting Point: N/R
Vapor Pressure (MM Hg/70 F): 325-525
Vapor Density (Air=1): 3-4
Specific Gravity: 0.70-0.73
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: ESTIMATED 1.5
Solubility In Water: NEGLIGIBLE
Percent Volatiles By Volume: 100
Viscosity: N/R
pH: N/R
Radioactivity: N/R
Form (Radioactive Matl): N/R
Magnetism (Milligauss): N/R
Corrosion Rate (IPY): UNKNOWN
Autoignition Temperature: 536F
Fire and Explosion Hazard Data
______
Flash Point: -45F,-43C
Flash Point Method: TCC
Lower Explosive Limit: UNKNOWN
Upper Explosive Limit: UNKNOWN
Extinguishing Media: USE CARBON DIOXIDE, FOAM, OR DRY CHEMICAL.
Special Fire Fighting Proc: WATER STREAM MAY SPREAD FIRE; USE WATER SPRAY
ONLY TO COOL FIRE EXPOSED CONTAINERS. IF LEAK OR SPILL HAS NOT IGNITED, USE
WATER SPRAY TO DISPERSE THE VAPORS.
Unusual Fire And Expl Hazrds: CAN FORM FLAMMABLE MIXTURES WITH AIR & FLASH
AT ROOM TEMPERATURE. EXPLOSION HAZARD IN NEAR FIRE. VAPOR IS HEAVIER THAN
AIR & CAN TRAVEL, IGNITE & FLASH BACK.
Reactivity Data
Stability: YES
Cond To Avoid (Stability): HEAT, SPARKS, FLAMES AND STATIC ELECTRICITY.
Materials To Avoid: NONE SPECIFIED BY MANUFACTURER.
Hazardous Decomp Products: INCOMPLETE COMBUSTION CAN YIELD CARBON
MONOXIDE, CARBON DIOXIDE, LEAD OXIDE AND VARIOUS HYDROCARBONS.
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Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT APPLICABLE

Health Hazard Data

LD50-LC50 Mixture: LD50 (ORAL RAT) IS UNKNOWN

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: LIQUID IS IRRITATING TO EYES. VAPOR MAY CAUSE EYE IRRITATION. LIQUID IS SLIGHTLY IRRITATING TO SKIN. PROLONGED OR REPEATED CONTACT CAN RESULT IN DERMATITIS. VAPORS MAY BE IRRITATING TO NOSE, THROAT & RESPIRATORY TRACT. INGESTION OF PRODUCT MAY RESULT IN VOMITING. ASPIRATION OF VOMITUS INTO LUNGS MAY CAUSE PNEUMONITIS.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: THIS COMPOUND CONTAINS NO INGREDIENTS AT CONCENTRATIONS OF 0.1% OR GREATER THAT ARE CARCINOGENS OR SUSPECT CARCINOGENS.

Signs/Symptoms Of Overexp: INHALE/INGEST-HEADACHE, NASAL & RESPIRATORY IRRITATION, DROWSINESS, FATIGUE, PNEUMONITIS, PULMONARY EDEMA, CNS DEPRESSION & KIDNEY DAMAGE. SKIN-SKIN DEFATTING. ASPIRATION INTO LUNGS WILL CAUSE CHEMICAL PNEUMONIA.

Med Cond Aggravated By Exp: PERSONS WITH PRE-EXISTING SKIN DISORDERS, IMPAIRED LIVER OR KIDNEY FUNCTIONS, OR CENTRAL NERVOUS SYSTEM & CHRONIC RESPIRATORY DISEASE SHOULD AVOID EXPOSURE TO THIS MATERIAL.

Emergency/First Aid Proc: EYES: FLUSH WITH RUNNING WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION. SKIN: WASH WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. GET MEDICAL ADVICE. INHALE: REMOVE TO FRESH AIR. GIVE AIR, OXYGEN OR ADMINISTER CPR, IF NOT BREATHING. GET MEDICAL ADVICE. INGEST: DO NOT INDUCE VOMITING, SINCE ASPIRATION INTO THE LUNGS WILL CAUSE CHEMICAL PNEUMONIA. SEEK MEDICAL ADVICE.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: NOTIFY EMERGENCY RESPONSE PERSONNEL. REMOVE IGNITION SOURCES. DIKE TO CONTAIN FLOW. REMOVE FREE LIQUID, DO NOT FLUSH INTO SEWER/WATER WAYS. BLANKET WITH FOAM OR USE WATER FOG TO DISPERSE VAPORS. PICK UP WITH PADS & ABSORBENT MATERIALS.

Neutralizing Agent: NOT APPLICABLE

Waste Disposal Method: MAXIMIZE PRODUCT RECOVERY FOR REUSE OR RECYCLING. USE APPROVED TREATMENT, TRANSPORTERS & DISPOSAL SITES IN COMPLIANCE WITH ALL LAWS. A PONTENTIAL DISPOSAL METHOD IS INCINERATION AND LAND DISPOSAL, IF PERMITTED.

Precautions-Handling/Storing: DO NOT STORE IN CLOSED VEHICLE. KEEP CONTAINERS CLOSED. DO NOT STORE WITH STRONG ACIDS OR OXIDIZERS. STORE AS AN OSHA CLASS 1B FLAMMABLE LIQUID.

Other Precautions: CONTAINERS SHOULD BE ABLE TO TO WITHSTAND PRESSURES EXPECTED FROM WARMING OR COOLING IN STORAGE. USE ELECTRICAL GROUNDING ON HANDLING/TRANSPORTATION EQUIPMENT.

Control Measures

Respiratory Protection: USE NIOSH/MSHA APPROVED RESPIRATOR WHEN EXPOSURE LIMITS ARE EXCEEDED. UP TO 1000 PPM, HALF-MASK ORGANIC VAPOR; UP TO 5000 PPM, FULL-FACED ORGANIC VAPOR OR FULL-FACED AIR SUPPLIED; >5000, FIRE FIGHTER OR UNKNOWN CONC. POSITIVE PRESSURE SCBA

Ventilation: MAINTAIN LOCAL/DILUTION VENTILATION TO KEEP AIR LEVELS BELOW 300 PPM. KEEP UPWIND IF LOADING, UNLOADING, TANK GAUGING.

Protective Gloves: NEOPRENE OR NITRILE RUBBER GLOVES

Eye Protection: SAFETY GLASSES - CHEMICAL SPLASH GOGGLES

Other Protective Equipment: WEAR APRON, BOOTS & FACIAL PROTECTION MADE OF NITRILE OR NEOPRENE. HAVE EMERGENCY EYE WASH AND SAFETY SHOWER AVAILABLE. Work Hygienic Practices: WASH THOROUGHLY AFTER HANDLING AND BEFORE EATING, DRINKING OR SMOKING. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE.

Suppl. Safety & Health Data: AVOID PROLONGED OR REPEATED EXPOSURE. DO NOT GET ON SKIN OR IN EYES. DO NOT BREATHE VAPORS OR MIST. DO NOT INGEST.

***KEEP AWAY FROM HEAT, SPARKS & OPEN FLAMES! GROUND ALL DRUMS & TRANSFER VESSELS WHEN HANDLING. EMPTY CONTAINERS RETAIN LIQUID/VAPOR RESIDUES; OBSERVE HAZARD PRECAUTIONS WHEN HANDLING.

DOD Hazardous Materials Information System DOD 6050.5-LR

AS OF July 1995

Proprietary Version - For U.S. Government Use Only

FSC: 9150

NIIN: 001866709

Manufacturer's CAGE: 61808

Part No. Indicator: A

Part Number/Trade Name: MIL-L-46152;15W40;ENGINE LUBE OIL

General Information

Item Name: LUBRICATING OIL, ENGINE
Company's Name: BATTENFELD AMERICA INC
Company's Street: 1575 CLINTON ST

Company's P. O. Box: N/K Company's City: BUFFALO

Company's State: NY
Company's Country: US

Company's Zip Code: 14206

Company's Emerg Ph #: 716-822-8410 Company's Info Ph #: 716-822-8410

Distributor/Vendor # 1: BATTENFELD GREASE AND OIL CORP OF NEW YO

Distributor/Vendor # 1 Cage: 60226

Distributor/Vendor # 2: Distributor/Vendor # 2 Cage: Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:
Distributor/Vendor # 4 Cage:

Safety Data Action Code: Safety Focal Point: D

Record No. For Safety Entry: 010 Tot Safety Entries This Stk#: 015

Status: SM

Date MSDS Prepared: 01NOV90 Safety Data Review Date: 100CT91

Supply Item Manager: CX

MSDS Preparer's Name: THOMAS G. MUSILLI

Preparer's Company: Preparer's St Or P. O. Box: Preparer's City: Preparer's State:

Preparer's State: Preparer's Zip Code: Other MSDS Number:

MSDS Serial Number: BDHFJ

Specification Number: MIL-L-46152 Spec Type, Grade, Class: GRADE 15W-40

Hazard Characteristic Code: N1

Unit Of Issue: DR

Unit Of Issue Container Qty: 55GAL Type Of Container: MIL-STD-290

Net Unit Weight: 407.6 LBS

Report for NIIN: 001866709 NRC/State License Number: N/R Net Explosive Weight: N/R Net Propellant Weight-Ammo: N/R Coast Guard Ammunition Code: N/R Ingredients/Identity Information Proprietary: NO Ingredient: MINERAL OIL Ingredient Sequence Number: 01 Percent: 75.7 Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: PY8038500 CAS Number: 64742-65-0 OSHA PEL: 5 MG/M3 (OIL MIST) ACGIH TLV: 5 MG/M3 Other Recommended Limit: NONE SPECIFIED -----Proprietary: NO Ingredient: LUBRIZOL 4856A (LUBRIZOL, CLEVELAND, OH) Ingredient Sequence Number: 02 Percent: 12.2 Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: 1004036LU CAS Number: OSHA PEL: NOT ESTABLISHED ACGIH TLV: NOT ESTABLISHED Other Recommended Limit: NONE SPECIFIED _____ Proprietary: NO Ingredient: OLIFIN COPOLYMER (EXXON CO. HOUSTON, TX) Ingredient Sequence Number: 03 Percent: 12.0 Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: 10030550P CAS Number: OSHA PEL: NOT ESTABLISHED ACGIH TLV: NOT ESTABLISHED Other Recommended Limit: NONE SPECIFIED -----Proprietary: NO Ingredient: ACRYLIC COPOLYMER (ROHM & HAAS CO. PHILADELPHIA, PA) Ingredient Sequence Number: 04 Percent: 0.1 Ingredient Action Code:

Ingredient: ACRYLIC COPOLYMER (ROHM & HAAS CO. PHILAI Ingredient Sequence Number: 04
Percent: 0.1
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1000422AC
CAS Number:
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED

DOD Hazardous Materials Information System DOD 6050.5-LR

AS OF July 1995

Proprietary Version - For U.S. Government Use Only

FSC: 9150

NIIN: 001866709

Manufacturer's CAGE: 61808

Part No. Indicator: A

Part Number/Trade Name: MIL-L-46152;15W40;ENGINE LUBE OIL

General Information

Item Name: LUBRICATING OIL, ENGINE
Company's Name: BATTENFELD AMERICA INC

Company's Street: 1575 CLINTON ST Company's P. O. Box: N/K Company's City: BUFFALO

Company's State: NY

Company's Country: US Company's Zip Code: 14206

Company's Emerg Ph #: 716-822-8410 Company's Info Ph #: 716-822-8410

Distributor/Vendor # 1: BATTENFELD GREASE AND OIL CORP OF NEW YO

Distributor/Vendor # 1 Cage: 60226

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 010

Tot Safety Entries This Stk#: 015 Status: SM

Date MSDS Prepared: 01NOV90

Safety Data Review Date: 100CT91

Supply Item Manager: CX

MSDS Preparer's Name: THOMAS G. MUSILLI

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BDHFJ

Specification Number: MIL-L-46152

Spec Type, Grade, Class: GRADE 15W-40

Hazard Characteristic Code: N1

Unit Of Issue: DR

Unit Of Issue Container Qty: 55GAL

Type Of Container: MIL-STD-290

Net Unit Weight: 407.6 LBS

Report for NIIN: 001866709 NRC/State License Number: N/R Net Explosive Weight: N/R Net Propellant Weight-Ammo: N/R Coast Guard Ammunition Code: N/R Ingredients/Identity Information ------Proprietary: NO Ingredient: MINERAL OIL Ingredient Sequence Number: 01 Percent: 75.7 Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: PY8038500 CAS Number: 64742-65-0 OSHA PEL: 5 MG/M3 (OIL MIST) ACGIH TLV: 5 MG/M3 Other Recommended Limit: NONE SPECIFIED -----Proprietary: NO Ingredient: LUBRIZOL 4856A (LUBRIZOL, CLEVELAND, OH) Ingredient Sequence Number: 02 Percent: 12.2 Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: 1004036LU CAS Number: OSHA PEL: NOT ESTABLISHED ACGIH TLV: NOT ESTABLISHED Other Recommended Limit: NONE SPECIFIED -----Proprietary: NO Ingredient: OLIFIN COPOLYMER (EXXON CO. HOUSTON, TX) Ingredient Sequence Number: 03 Percent: 12.0 Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: 10030550P CAS Number: OSHA PEL: NOT ESTABLISHED ACGIH TLV: NOT ESTABLISHED Other Recommended Limit: NONE SPECIFIED -----Proprietary: NO Ingredient: ACRYLIC COPOLYMER (ROHM & HAAS CO. PHILADELPHIA, PA)

Ingredient Sequence Number: 04

Percent: 0.1

Ingredient Action Code: Ingredient Focal Point: D

NIOSH (RTECS) Number: 1000422AC

CAS Number:

OSHA PEL: NOT ESTABLISHED ACGIH TLV: NOT ESTABLISHED Report for NIIN: 001866709

Other Recommended Limit: NONE SPECIFIED

_____ Proprietary: NO

Ingredient: MFR ALSO LISTS "ZINC COMPOUNDS" SUBJECT TO COMMUNITY RIGHT TO

KNOW IN ANOTHER LOCATION. THIS MAKS % GRATER THAN 100.

Ingredient Sequence Number: 05

Percent: 2.4

Ingredient Action Code: Ingredient Focal Point: D

NIOSH (RTECS) Number: 9999999ZZ

CAS Number:

OSHA PEL: 5 MG ZNO/M3 ACGIH TLV: 5 MG ZNO/M3

Other Recommended Limit: NONE SPECIFIED ______

Physical/Chemical Characteristics

Appearance And Odor: FLUID OIL, BLAND ODOR

Boiling Point: 700F,371C Melting Point: UNKNOWN

Vapor Pressure (MM Hg/70 F): UNKNOWN

Vapor Density (Air=1): UNKNOWN

Specific Gravity: 0.89

Decomposition Temperature: UNKNOWN Evaporation Rate And Ref: UNKNOWN Solubility In Water: NEGLIGIBLE Percent Volatiles By Volume: UNKNON

Viscosity: N/K

pH: N/K

Radioactivity:

Form (Radioactive Matl): Magnetism (Milligauss): N/P Corrosion Rate (IPY): UNKNOWN Autoignition Temperature: 470F

Fire and Explosion Hazard Data

-------Flash Point: 440F,227C

Flash Point Method: COC

Lower Explosive Limit: UNKNOWN Upper Explosive Limit: UNKNOWN

Extinguishing Media: USE WATER FOG, CARBON DIOXIDE, FOAM, OR DRY CHEMICAL. Special Fire Fighting Proc: WEAR FIRE FIGHTING PROTECTIVE EQUIPMENT AND A FULL FACED SELF CONTAINED BREATHING APPARATUS. EVACUATE AREA. COOL FIRE EXPOSED CONTAINERS WITH WATER SPRAY.

Unusual Fire And Expl Hazrds: NONE GIVEN BY MANUFACTURER (SUPPLIER).

Reactivity Data ------

Stability: YES

Cond To Avoid (Stability): HIGH HEAT, OPEN FLAMES AND OTHER SOURCES OF IGNITION

Materials To Avoid: STRONG OXIDIZING AGENTS

Report for NIIN: 001866709

Hazardous Decomp Products: CARBON DIOXIDE, CARBON MONOXIDE

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT RELEVANT

Health Hazard Data

LD50-LC50 Mixture: ORAL RAT LD50 IS NOT ESTABLISHED

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: NO

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: PRODUCT IS VERY MILDLY IRRITATING TO BODY TISSUES. MOST LIKELY HAZARD IS THAT OF BREATHING THE MIST OR VAPORS SHOULD THE PRODUCT BE HEATED OR MISTED.

Carcinogenicity - NTP: NO Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: THE PRODUCT CONTAINS NO INGREDIENT THAT IS LISTED BY IARC, NTP OR OSHA AS A CARCINOGEN.

Signs/Symptoms Of Overexp: EYE: MILD IRRITATION. SKIN: POSSIBLE MILD IRRITATION. INHALED: RESPIRATORY IRRITATION, POSSIBLE PULMONARY EDEMA IF MIST IS INHALED. INGESTED: NONE GIVEN BY MANUFACTURER (SUPPLIER).

Med Cond Aggravated By Exp: NONE REPORTED

Emergency/First Aid Proc: EYE:FLUSH W/WATER 15 MIN, HOLD LIDS OPEN. SKIN: WASH WITH SOAP & WATER. REMOVE CONTAMINATED CLOTHING AND LAUNDER BEFORE REUSE. INHALED: REMOVE TO FRESH AIR. RESTORE BREATHING IF NECESSARY. INGESTED: DO NOT INDUCE VOMITING. GIVE 2 LARGE GLASSES OF MILK OR WATER AND GET IMMEDIATE MEDICAL CARE. GIVE NOTHING BY MOUTH IF UNCONSCIOUS. IF IRRITATION PERSISTS OR IS SEVERE, SEE A DOCTOR.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: RECOVER AS LIQUID IF POSSIBLE. ADSORB REMAINDER ON EARTH, SAND, SAWDUST, ETC. KEEP OUT OF DRAINS, SEWERS, AND WATERWAYS. STORE IN CLOSED CONTAINERS PENDING DISPOSAL. Neutralizing Agent: NONE

Waste Disposal Method: DISPOSE I/A/W FEDERAL, STATE, LOCAL REGULATIONS. MFR SUGGESTS RECYCLE OR IF THAT IS NOT PRACTICLE TO INCINERATE.

Precautions-Handling/Storing: STORE IN COOL, DRY, WELL VENTILATED AREA. Other Precautions: NONE

Control Measures

Respiratory Protection: RESPIRATOR WILL NOT NORMALLY BE NECESSARY. USE NIOSH/MSHA APPROVED AIR SUPPLIED RESPIRATOR OR RESPIRATOR FOR OIL MIST IF EXPOSURE IS ABOVE THE TLV/PEL. SEE 29 CFR 1910.134 FOR REGULATIONS PERTAINING TO RESPIRATOR USE.

Ventilation: NORMAL ROOM VENTILATION SHOULD BE SUFFICIENT. SUPPLEMENT WITH LOCAL EXHAUST IF NEEDED (OIL MIST).

Protective Gloves: NEOPRENE OR BUTYL RUBBER (OIL RESISTANT) Eye Protection: SAFETY GLASSES OR SPLASH GOGGLES

Other Protective Equipment: AS NEEDED TO PREVENT PROLONGED/REPEATED

Work Hygienic Practices: USE GOOD INDUSTRIAL HYGIENE PRACTICE. MINIMIZE

Report for NIIN: 001866709 PERSONAL CONTACT. WASH THOROUGHLY AFTER HANDLING. Suppl. Safety & Health Data: MFR CODE 60,501-15/40 Transportation Data Transportation Action Code: Transportation Focal Point: D Trans Data Review Date: DOT PSN Code: ZZZ DOT Symbol: DOT Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION DOT ID Number: N/R DOT Pack Group: DOT Label: N/R DOT/DoD Exemption Number: N/R IMO PSN Code: ZZZ IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION IMO Regulations Page Number: N/R IMO UN Number: N/R IMO UN Class: N/R IMO Subsidiary Risk Label: N/R IATA PSN Code: ZZZ IATA UN ID Number: N/R IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION IATA Subsidiary Risk Class: N/R IATA Label: N/R AFI PSN Code: ZZZ AFI Symbols: AFI Prop. Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION AFI ID Number: N/R AFI Pack Group: AFI Label: N/R AFI Special Prov: AFI Basic Pac Ref: MMAC Code: N.O.S. Shipping Name: Additional Trans Data: -----Disposal Data

Disposal Data Action Code: Disposal Data Focal Point: E Disposal Data Review Date: 90150 Rec # For This Disp Entry: 04 Tot Disp Entries Per NSN: 006 Landfill Ban Item: YES

Disposal Supplemental Data: 1GRADE 15W-40 OF MIL-L-46152 IN CASE OF ACCIDENTAL EXPOSURE OR DISCHARGE, CONSULT HEALTH AND SAFETY FILE FOR

1st EPA Haz Wst Code New:

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Report for NIIN: 001866709
   1st EPA Haz Wst Name New: NOT REGULATED
   1st EPA Haz Wst Char New: NOT REGULATED BY RCRA
   1st EPA Acute Hazard New: NO
   2nd EPA Haz Wst Code New:
   2nd EPA Haz Wst Name New:
   2nd EPA Haz Wst Char New:
  2nd EPA Acute Hazard New:
  3rd EPA Haz Wst Code New:
  3rd EPA Haz Wst Name New:
  3rd EPA Haz Wst Char New:
  3rd EPA Acute Hazard New:
  Label Data
  ______
  Technical Review Date: 100CT91
  Label Date:
  MFR Label Number: N/K
  Label Status: F
  Common Name: MIL-L-46152;15W40;ENGINE LUBE OIL
  Chronic Hazard: N/P
  Signal Word: CAUTION!
 Acute Health Hazard-None:
 Acute Health Hazard-Slight: X
 Acute Health Hazard-Moderate:
 Acute Health Hazard-Severe:
 Contact Hazard-None:
 Contact Hazard-Slight: X
 Contact Hazard-Moderate:
 Contact Hazard-Severe:
 Fire Hazard-None:
 Fire Hazard-Slight: X
 Fire Hazard-Moderate:
 Fire Hazard-Severe:
 Reactivity Hazard-None: X
 Reactivity Hazard-Slight:
 Reactivity Hazard-Moderate:
 Reactivity Hazard-Severe:
 Special Hazard Precautions: COMBUSTIBLE MATERIAL, MAY BE IGNITED BY HEAT,
OPEN FLAMES OR SPARKS. MAY BE POISONOUS IF INHALED OR ABSORBED THROUGH SKIN.
VAPORS CAUSE DIZZINESS OR SUFFOCATION. CONTACT MAY IRRITATE OR BURN SKIN
AND EYES. FIRE MAY PRODUCE IRRITATING OR POISONOUS GASES. RUNOFF FROM FIRE
CONTROL OR DILUTION WATER MAY CAUSE POLLUTION. DO NOT TAKE INTERNALLY. DO NOT
BREATHE VAPORS OR MIST.AVOID CONTACT WITH EYES AND SKIN.KEEP AWAY FROM
HEAT, OPEN FLAMES AND SPARKS.FIRST AID: IF INGESTED OR INHALED, REMOVE TO
FRESH AIR AND CONSULT A PHYSICIAN. FOR EYES AND SKIN, FLUSH WITH PLENTY OF
WATER FOR ABOUT 15-20 MINUTES AND SEEK MEDICAL ATTENTION IMMEDIATELY IF
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y
Label Name: BATTENFELD AMERICA INC
Label Street: 1575 CLINTON ST
```

Label P.O. Box: N/K Label City: BUFFALO

Label State: NY

Label Zip Code: 14206

Label Country: US

Label Emergency Number: 716-822-8410 Year Procured: N/K

DOD Hazardous Materials Information System DOD 6050.5-LR

AS OF July 1995

Proprietary Version - For U.S. Government Use Only

FSC: 9150

NIIN: 001450268

Manufacturer's CAGE: 54527

Part No. Indicator: A

Part Number/Trade Name: AEROSHELL GREASE 22; CODE 70022

General Information

Item Name: GREASE, AIRCRAFT

Company's Name: SHELL OIL COMPANY

Company's Street: ENVIRONMENTAL AFFAIRS

Company's P. O. Box: 4320 Company's City: HOUSTON

Company's State: TX

Company's Country: US

Company's Zip Code: 77210

Company's Emerg Ph #: 713-473-9461 Company's Info Ph #: 713-241-4819

Distributor/Vendor # 1: SHELL OIL CO., LUBRICANT SALES, DGSC COO

Distributor/Vendor # 1 Cage: 3N254

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 008

Tot Safety Entries This Stk#: 008

Status: SE

Date MSDS Prepared: 03NOV88

Safety Data Review Date: 20MAR91

Supply Item Manager: CX MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BDCGG

Specification Number: MIL-G-81322

Spec Type, Grade, Class: N/R Hazard Characteristic Code: N1

Unit Of Issue: CN

Unit Of Issue Container Qty: 5.0 LBS

Type Of Container: CAN

Net Unit Weight: 5.0 LBS

Report for NIIN: 001450268 NRC/State License Number: N/R Net Explosive Weight: Net Propellant Weight-Ammo: N/R Coast Guard Ammunition Code: ------Ingredients/Identity Information Proprietary: NO Ingredient: POLYALPHAOLEFINS Ingredient Sequence Number: 01 Percent: 86.0 Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: 1001507PA CAS Number: 68037-01-4 OSHA PEL: NOT ESTABLISHED ACGIH TLV: NOT ESTABLISHED Other Recommended Limit: NOT ESTABLISHED Proprietary: NO Ingredient: BENTONITE (AS NUISANCE DUST OR PARTICULATES NOT OTHERWISE REGULATED) Ingredient Sequence Number: 02 Percent: 6.0 Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: CT9450000 CAS Number: 1302-78-9 OSHA PEL: 15 MG/M3 TOTAL DUST ACGIH TLV: 10 MG/M3 TDUST;8990 Other Recommended Limit: NOT ESTABLISHED -----Proprietary: NO Ingredient: FATTY ACID AMIDES Ingredient Sequence Number: 03 Percent: 4.0 Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: 1002869FA CAS Number: 64754-98-9 OSHA PEL: NOT ESTABLISHED ACGIH TLV: NOT ESTABLISHED Other Recommended Limit: NOT ESTABLISHED -----Proprietary: NO Ingredient: OTHER COMPONENTS (TYPE NOT SPECIFIED) Ingredient Sequence Number: 04 Percent: 4.0 Ingredient Action Code:

Ingredient Focal Point: D

OSHA PEL: NOT ESTABLISHED

CAS Number:

NIOSH (RTECS) Number: 10032140C

Report for NIIN: 001450268 ACGIH TLV: NOT ESTABLISHED Other Recommended Limit: NOT ESTABLISHED Proprietary: NO Ingredient: OTHER COMPONENTS MAY BE OF THOSE USED/LEFT OVER BY MFG PROCESS-SEE SUPPL DATA FOR NAMES. Ingredient Sequence Number: 05 Percent: N/K Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: 9999999ZZ CAS Number: OSHA PEL: ACGIH TLV: N/K Other Recommended Limit: Physical/Chemical Characteristics Appearance And Odor: SMOOTH AMBER GREASE. SLIGHT ODOR Boiling Point: N/K Melting Point: Vapor Pressure (MM Hg/70 F): N/R Vapor Density (Air=1): N/K Specific Gravity: N/K Decomposition Temperature: Evaporation Rate And Ref: N/R Solubility In Water: NEGLIGIBLE Percent Volatiles By Volume: N/R Viscosity: pH: Radioactivity: Form (Radioactive Matl): Magnetism (Milligauss): N/P Corrosion Rate (IPY): Autoignition Temperature: Fire and Explosion Hazard Data Flash Point: 455F,235C Flash Point Method: PMCC Lower Explosive Limit: N/K Upper Explosive Limit: N/K Extinguishing Media: USE CARBON DIOXIDE, FOAM, DRY CHEMICAL, OR WATER FOG. Special Fire Fighting Proc: FIRE FIGHTERS SHOULD USE NIOSH APPROVED SCBA & FULL PROTECTIVE EQUIPMENT WHEN FIGHTING CHEMICAL FIRE. USE WATER SPRAY TO COOL NEARBY CONTAINERS EXPOSED TO FIRE. Unusual Fire And Expl Hazrds: NONE NOTED BY THE MGF; FIRE OR EXCESSIVE HEAT MAY CAUSE PRODUCTION OF HAZARDOUS DECOMPOSITION PRODUCTS. ______

Reactivity Data

Cond To Avoid (Stability): HIGH TEMPERATURES, SPARKS, AND OPEN FLAMES

Materials To Avoid: STRONG OXIDIZING AGENTS

Hazardous Decomp Products: NO*X,CO & OTHER UNIDENT OXYGENATES CAN FORM

DURING COMBUST

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT APPLICABLE

Health Hazard Data

LD50-LC50 Mixture: N/K

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: ACUTE: IRRITATION OF EYES AND SKIN; CNS EFFECTS LIKE HEADACHE, NAUSEA, DIZZINESS, VOMITTING: CHRONIC: DRYING OF SKIN OR DERMATITIS; NO ILL EFFECTS DUE TO INHALATION OR INGESTION WERE IDENTIFIED. Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: DATA PER MSDS

Signs/Symptoms Of Overexp: EYES:MILD IRRITG; SKIN: REPTD CONTCT MAY CAUSE SKIN DISORDER OR LOCAL NECROSIS; INHAL/INGEST: NOT KNOWN

Med Cond Aggravated By Exp: PERSONS WITH A HISTORY OF AILMENTS OR WITH A PRE-EXISTING DISEASE INVOLVING THE EYES, SKIN, OR RESPIRATORY TRACT MAY BE AT INCREASED RISK FROM EXPOSURE.

Emergency/First Aid Proc: INHALATION: REMOVE TO FRESH AIR. RESUSCITATE IF NOT BREATHING. GET MEDICAL ATTENTION. EYES: IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR 15 MINUTES HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION. SKIN: REMOVE CONTAMINATED CLOTHING. WASH WITH SOAP AND WATER. IF IRRITATION PERSISTS, GET MEDICAL ADVICE. INGESTION: DO NOT INDUCE VOMITING. GIVE NOTHING BY MOUTH IF UNCONSCIOUS. GET IMMEDIATE MEDICAL ATTENTION.

______ Precautions for Safe Handling and Use

Steps If Matl Released/Spill: USE PROPER PERSONAL PROTECTION; SCOOP UP AND CONTAIN FREE MATERIAL IF POSSIBLE; USE SUITABLE INERT ABSORBENT MATERIAL AND RECOVER FOR PROPER DISPOSAL IN AN APPROVED CONTAINER. Neutralizing Agent: NOT APPLICABLE.

Waste Disposal Method: CONSULT LOCAL AUTHORITIES.DISPOSAL MUST BE MADE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.

Precautions-Handling/Storing: STORE IN A COOL, DRY, WELL VENTILATED AREA. KEEP CONTAINERS TIGHTLY CLOSED WHEN NOT IN USE. PROTECT CONTAINERS FROM PHYSICAL DAMAGE.

Other Precautions: DO NOT TAKE INTERNALLY. DO NOT BREATHE MIST. AVOID PROLONGED OR REPEATED BREATHING OF VAPOR. AVOID CONTACT WITH EYES. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.

Control Measures

Respiratory Protection: NORMALLY NOT NEEDED; USE NIOSH/MSHA APPROVED RESPIRATOR AS REQUIRED IF ABOVE PEL/TLV OR SCBA IN AN ENCLOSED AREA. Ventilation: NORMAL ROOM VENTILATION; LOCAL/GENERAL TO MAINTAIN PEL/TLV. Protective Gloves: NEOPRENE, NITRILE, OR NATURAL RUBBER

Eye Protection: SAFETY GOGGLES WITH OPTIONAL FACE SHIELD Other Protective Equipment: EYE WASH STATION, WORK CLOTHING AND APRON AS

Work Hygienic Practices: OBSERVE GOOD PERSONAL HYGIENE PRACTICES AND RECOMMENDED PROCEDURES. DO NOT WEAR CONTAMINATED CLOTHING OR FOOTWEAR. Suppl. Safety & Health Data: MSDS FROM SHELL DATED:9/13/85; OTHER COMPONENT ENTERED ON PREV HMIS ENTRY: (1) SODIUM HYDROXIDE 0.5%; (2) SODIUM NITRITE 0.5%; (2) 3-AMINO-1,2,4-TRIAZOL 0.05%-SEE OTHER PRECAUTIONS.

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Transportation Data
Transportation Action Code:
Transportation Focal Point: D
Trans Data Review Date: 90024
DOT PSN Code: ZZZ
DOT Symbol:
DOT Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
DOT Class: N/R
DOT ID Number: N/R
DOT Pack Group:
DOT Label: N/R
DOT/DoD Exemption Number:
IMO PSN Code: ZZZ
IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION
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IMO Regulations Page Number: N/R IMO UN Number: N/R

IMO UN Class: N/R IMO Subsidiary Risk Label: N/R

IATA PSN Code: ZZZ

IATA UN ID Number: N/R

IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION

IATA UN Class: N/R

IATA Subsidiary Risk Class: N/R

IATA Label: N/R AFI PSN Code: ZZZ

AFI Symbols:

AFI Prop. Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION AFI Class: N/R

AFI ID Number: N/R

AFI Pack Group:

AFI Label: N/R

AFI Special Prov:

AFI Basic Pac Ref:

MMAC Code:

N.O.S. Shipping Name:

Additional Trans Data: NOT REGULATED FOR SHIPPING.

Disposal Data

Disposal Data Action Code: Disposal Data Focal Point: Disposal Data Review Date: Rec # For This Disp Entry:

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Report for NIIN: 001450268
 Tot Disp Entries Per NSN:
 Landfill Ban Item:
 Disposal Supplemental Data:
 1st EPA Haz Wst Code New:
 1st EPA Haz Wst Name New:
 1st EPA Haz Wst Char New:
 1st EPA Acute Hazard New:
 2nd EPA Haz Wst Code New:
 2nd EPA Haz Wst Name New:
 2nd EPA Haz Wst Char New:
 2nd EPA Acute Hazard New:
 3rd EPA Haz Wst Code New:
 3rd EPA Haz Wst Name New:
 3rd EPA Haz Wst Char New:
 3rd EPA Acute Hazard New:
 ______
                               Label Data
 ______
 Label Required: YES
 Technical Review Date: 25AUG90
 Label Date:
MFR Label Number: N/R
Label Status: F
Common Name: AEROSHELL GREASE; SHELL CODE: 70022
Chronic Hazard: N/P
Signal Word: WARNING!
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate: X
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight: X
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight: X
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None: X
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: COMBUSTIBLE MATERIAL, MAY BE IGNITED BY HEAT,
OPEN FLAMES OR SPARKS. MAY BE POISONOUS IF INHALED OR ABSORBED THROUGH SKIN.
VAPORS CAUSE DIZZINESS OR SUFFOCATION. CONTACT MAY IRRITATE OR BURN SKIN
AND EYES. FIRE MAY PRODUCE IRRITATING OR POISONOUS GASES. RUNOFF FROM FIRE
CONTROL OR DILUTION WATER MAY CAUSE POLLUTION. DO NOT TAKE INTERNALLY. DO NOT
BREATHE VAPORS OR MIST. AVOID CONTACT WITH EYES AND SKIN. KEEP AWAY FROM
HEAT, OPEN FLAMES AND SPARKS.FIRST AID: IF INGESTED OR INHALED, REMOVE TO
FRESH AIR AND CONSULT A PHYSICIAN. FOR EYES AND SKIN, FLUSH WITH PLENTY OF
WATER FOR ABOUT 15-20 MINUTES AND SEEK MEDICAL ATTENTION IMMEDIATELY IF
```

IRRITATION PERSISTS Protect Eye: Y

Protect Skin: Y

Protect Respiratory: Y

Label Name: SHELL OIL COMPANY

Label Street: HEALTH, SAFETY AND ENVIRONMENT

Label P.O. Box: 4320 Label City: HOUSTON

Label State: TX

Label Zip Code: 77210

Label Country: US

Label Emergency Number: 713-473-9461

Year Procured: N/K

DOD Hazardous Materials Information System DoD 6050.5-LR

AS OF July 1995

Proprietary Version - For U.S. Government Use Only

FSC: 6850

NIIN: 011603868

Manufacturer's CAGE: 82925

Part No. Indicator: A

Part Number/Trade Name: MIL-A-53009

General Information

Item Name: INHIBITOR, CORROSION, LIQUID COOLING SYSTEM

Company's Name: OCTAGON PROCESS INC.

Company's Street: 596 RIVER ROAD

Company's P. O. Box: N/K

Company's City: EDGEWATER

Company's State: NJ Company's Country: US

Company's Zip Code: 07020-1105

Company's Emerg Ph #: 201-945-9400

Company's Info Ph #: 201-945-9400

Distributor/Vendor # 1: N/R

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 005

Tot Safety Entries This Stk#: 006

Status: SM

Date MSDS Prepared: 190CT86

Safety Data Review Date: 12JUN89

Supply Item Manager: CX

MSDS Preparer's Name: N/K

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BGPKS

Specification Number: MIL-A-53009

Spec Type, Grade, Class: N/R

Hazard Characteristic Code: N1

Unit Of Issue: QT

Unit Of Issue Container Qty: 1 QUART

Type Of Container: BOTTLE

Net Unit Weight: 2.5 POUNDS

Report for NIIN: 011603868 NRC/State License Number: N/R Net Explosive Weight: Net Propellant Weight-Ammo: N/R Coast Guard Ammunition Code: -----Ingredients/Identity Information Proprietary: NO Ingredient: NO HAZARDOUS INGREDIENTS PER MANUFACTURER. Ingredient Sequence Number: 01 Percent: N/K Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: 1000314NH CAS Number: 7732-18-5 OSHA PEL: N/K ACGIH TLV: N/K Other Recommended Limit: N/K Proprietary: NO Ingredient: SODIUM TETRABORATE, DECAHYDRATE Ingredient Sequence Number: 02 Percent: 29 Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: VZ2275000 CAS Number: 1303-96-4 OSHA PEL: 10 MG/M3 ACGIH TLV: 5 MG/M3; 9192 Other Recommended Limit: Proprietary: NO Ingredient: POTASSIUM SILICATE (SOLUTION) Ingredient Sequence Number: 03 Percent: 4.6 Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: 1002014PS CAS Number: OSHA PEL: N/K ACGIH TLV: N/K Other Recommended Limit: N/K -----Proprietary: NO Ingredient: SODIUM MERCAPTOBENZOTHIAZOLE Ingredient Sequence Number: 04 Percent: 3.0 Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: DL6825000 CAS Number: 249-22-64 OSHA PEL: N/K ACGIH TLV: N/K

```
Report for NIIN: 011603868
 Other Recommended Limit: N/K
 ______
                Physical/Chemical Characteristics
______
Appearance And Odor: CLEAR, STRAW COLORED LIQUID
Boiling Point: 212F/100C
Melting Point: N/R
Vapor Pressure (MM Hg/70 F): N/K
Vapor Density (Air=1): N/K
Specific Gravity: 1.185-1.200/60F
Decomposition Temperature: N/K
Evaporation Rate And Ref: N/K
Solubility In Water: COMPLETE
Percent Volatiles By Volume: 63
Viscosity:
pH:
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss): N/P
Corrosion Rate (IPY): N/K
Autoignition Temperature: NONE
______
                Fire and Explosion Hazard Data
______
Flash Point: NONE
Flash Point Method: N/P
Lower Explosive Limit: N/R
Upper Explosive Limit: N/R
Extinguishing Media: EXTINGUISHING MEDIA SUITABLE FOR SURROUNDING FIRE.
Special Fire Fighting Proc: WEAR SCBA AND PROTECTIVE CLOTHING WHEN
FIGHTING CHEMICAL FIRE.
Unusual Fire And Expl Hazrds: NONE
______
                      Reactivity Data
-----
Stability: YES
Cond To Avoid (Stability): DO NOT ALLOW MATERIAL TO FREEZE.
Materials To Avoid: STRONG ACIDS AND OXIDIZERS.
Hazardous Decomp Products: CARBON DIOXIDE, CARBON MONOXIDE & SILICATE
RESIDUE.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): N/R
------
                    Health Hazard Data
______
LD50-LC50 Mixture: N/K
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: NO
Health Haz Acute And Chronic: ACUTE: IRRITATION OF EYES, SKIN AND
RESPIRATORY TRACT; REDNESS OF EYES, BURNING SENSATION, COUGHING. CHRONIC:
```

IRRITATION.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: N/K

Signs/Symptoms Of Overexp: SEE HEALTH HAZARDS DATA.

Med Cond Aggravated By Exp: DERMATITIS

Emergency/First Aid Proc: EYE:FLUSH EYES WITH PLENTY OF WATER FOR 15 MINUTES. GET MEDICAL ATTENTION. SKIN: WASH SKIN WITH SOAP & WATER. REMOVE CONTAMINATED CLOTHING AND LAUNDER BEFORE REUSE. INGEST: INDUCE VOMITING IF CONSCIOUS. GET MEDICAL ATTENTION.

Precautions for Safe Handling and Use

______ Steps If Matl Released/Spill: RETAIN MATERIAL BY DICKING. ABSORB ON INERT MATERIAL OR PICK UP BY VACUUM. PLACE IN SUITABLE CONTAINER FOR DISPOSAL. FLUSH WITH LARGE AMOUNTS OF WATER TO RINSE AWAY RESIDUE.

Neutralizing Agent: ACETIC ACID (DILUTE)

Waste Disposal Method: DISPOSE I/A/W ALL LOCAL, STATE AND FEDERAL REGS.

Precautions-Handling/Storing:

Other Precautions:

Control Measures

-----Respiratory Protection: NONE NORMALLY REQUIRED Ventilation: MECHANICAL (GENERAL) RECOMMENDED

Protective Gloves: RUBBER, NEOPRENE.

Eye Protection: CHEMICAL SPLASH GOGGLES/FACE SHIELD

Other Protective Equipment: APRON, EYE WASH FOUNTAIN, SAFETY SHOWER. Work Hygienic Practices: AVOID CONTACT WITH EYES AND SKIN; DO NOT USE CONTAMINATED CLOTHING.

Suppl. Safety & Health Data:

Transportation Data

------Transportation Action Code:

Transportation Focal Point: D Trans Data Review Date: 89234

DOT PSN Code: ZZZ

DOT Symbol:

DOT Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION

DOT Class: N/R

DOT ID Number: N/R

DOT Pack Group:

DOT Label: N/R

DOT/DoD Exemption Number:

IMO PSN Code: ZZZ

IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION

IMO Regulations Page Number: N/R

IMO UN Number: N/R

IMO UN Class: N/R

IMO Subsidiary Risk Label: N/R

IATA PSN Code: ZZZ

IATA UN ID Number: N/R

IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION

```
Report for NIIN: 011603868
 IATA UN Class: N/R
 IATA Subsidiary Risk Class: N/R
 IATA Label: N/R
 AFI PSN Code: ZZZ
 AFI Symbols:
 AFI Prop. Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
 AFI Class: N/R
 AFI ID Number: N/R
 AFI Pack Group:
 AFI Label: N/R
 AFI Special Prov:
 AFI Basic Pac Ref:
MMAC Code:
N.O.S. Shipping Name:
Additional Trans Data:
______
                       Disposal Data
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries Per NSN:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code New:
1st EPA Haz Wst Name New:
1st EPA Haz Wst Char New:
1st EPA Acute Hazard New:
2nd EPA Haz Wst Code New:
2nd EPA Haz Wst Name New:
2nd EPA Haz Wst Char New:
2nd EPA Acute Hazard New:
3rd EPA Haz Wst Code New:
3rd EPA Haz Wst Name New:
3rd EPA Haz Wst Char New:
3rd EPA Acute Hazard New:
______
                         Label Data
______
Label Required: YES
Technical Review Date:
Label Date:
MFR Label Number:
Label Status: G
Common Name: MIL-A-53009
Chronic Hazard: N/P
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
```

Contact Hazard-Slight: Contact Hazard-Moderate: Contact Hazard-Severe:

Fire Hazard-None:

Fire Hazard-Slight:

Fire Hazard-Moderate:

Fire Hazard-Severe:

Reactivity Hazard-None:

Reactivity Hazard-Slight:

Reactivity Hazard-Moderate:

Reactivity Hazard-Severe:

Special Hazard Precautions: ACUTE: IRRITATION OF EYES, SKIN AND RESPIRATORY TRACT; REDNESS OF EYES, BURNING SENSATION, COUGHING. CHRONIC: IRRITATION. SEE HEALTH HAZARDS DATA.

Protect Eye:

Protect Skin:

Protect Respiratory:

Label Name: OCTAGON PROCESS INC.

Label Street: 596 RIVER ROAD

Label P.O. Box: N/K

Label City: EDGEWATER

Label State: NJ

Label Zip Code: 07020-1105

Label Country: US

Label Emergency Number: 201-945-9400

Year Procured:

DOD Hazardous Materials Information System DoD 6050.5-LR

AS OF July 1995

Proprietary Version - For U.S. Government Use Only FSC: 9130 NIIN: 010315816 Manufacturer's CAGE: 86961

Part No. Indicator: A Part Number/Trade Name: SHELL TURBINE FUEL JP-8

General Information

Item Name: TURBINE FUEL, AVIATION, JP-8 F34 Company's Name: SHELL OIL CO Company's Street: 1 SHELL PLAZA Company's P. O. Box: 2463 Company's City: HOUSTON Company's State: TX Company's Country: US Company's Zip Code: 77001

Company's Emerg Ph #: 713-473-9461 Company's Info Ph #: 713-241-4819

Distributor/Vendor # 1: Distributor/Vendor # 1 Cage: Distributor/Vendor # 2: Distributor/Vendor # 2 Cage: Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage: Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage: Safety Data Action Code: Safety Focal Point: D

Record No. For Safety Entry: 023 Tot Safety Entries This Stk#: 025 Status: SE

Date MSDS Prepared: 11NOV85

Safety Data Review Date: 11JUL89

Supply Item Manager: KY

MSDS Preparer's Name: JOHN P. SEPESI

Preparer's Company: Preparer's St Or P. O. Box: Preparer's City:

Preparer's State: Preparer's Zip Code: Other MSDS Number:

MSDS Serial Number: BGXRR

Specification Number: MIL-T-83133 Spec Type, Grade, Class: GRADE JP-8 Hazard Characteristic Code: F4

Unit Of Issue: GL

Unit Of Issue Container Qty:

Type Of Container: BULK

Net Unit Weight:

Solubility In Water: NEGLIGIBLE Percent Volatiles By Volume: N/K

Viscosity: pH: N/K

Radioactivity:

Form (Radioactive Matl):
Magnetism (Milligauss): N/P
Corrosion Rate (IPY):

Autoignition Temperature:

Fire and Explosion Hazard Data

Flash Point: 100F

Flash Point Method: TCC

Lower Explosive Limit: 0.7

Upper Explosive Limit: 5.0

Extinguishing Media: FOAM, CARBON DIOXIDE DRY CHEMICAL, WATER FOG. WATER MAY BE INEFFECTIVE AND MAY SPREAD FIRE IF IMPROPERLY UUSED.

Special Fire Fighting Proc: USE SELF CONTAINED BREATHING APPARATUS, ESPECIALLY IN ENCLOSED AREAS. WATER SPRAY MAY BE USED TO COOL FIRE EXPOSED CONTAINERS AND EQUIPMENT.

Unusual Fire And Expl Hazrds: WHEN HEATED SUFFICIENTLY, VAPORS MAY FORM EXPLOSIVE MIXTURES WITH AIR. SATURATED NEWSPAPERS, RAGS, ETC. MAY UNDERGO SPONTANEOUS COMBUSTION.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): HEAT, IGNITION SOURCES

Materials To Avoid: STRONG OXIDIZERS.

Hazardous Decomp Products: CARBON

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): N/R

Health Hazard Data

LD50-LC50 Mixture: N/K

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: NO

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: PRODUCT IS A MILD IRRITANT. MOST HAZARDOUS EXPOSURE; EXPOSURE IS TO AIRBORN MIST OR OTHER ASPIRATION OF LIQUID INTO LUNGS. PROLONGED/REPEATED OVEREXPOSURE MAY CAUSE LIVER OR KIDNEY DAMAGE.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: API HAS DONE STUDIES INDICATING THAT REPEATED OVER EXPOSURES MAY CAUSE CANCER IN MICE.

Signs/Symptoms Of Overexp: EYE:MILD IRRITATION. SKIN:DRYING, DEFATTING WITH PROLONGED/REPEATED CONTACT. INHALED:HEADACHE, NAUSEA, CONFUSION, DROWINESS. ASPIRATION OF LIQUID MAY CAUSE CHEMICAL PNEUMONITIS. INGESTED:G/ I IRRITATION, NAUSEA, POSSIBLE VOMITING.

Med Cond Aggravated By Exp: NONE EXPECTED

Emergency/First Aid Proc: EYE:FLUSH WITH WATER 15 MIN. SKIN:REMOVE CONTAMINATED CLOTHING (LAUNDER BEGFORE REUSE) AND THOROUGHLY AREA OF CONTACT WITH SOAP AND WATER. INHALED: REMOVE FROM EXPOSURE. RESUSCITATE OR GIVE OXYGEN IF NEEDED THEN GET MEDICAL ATTENTION. INGESTED: DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION. IF ANY IRRITATION PERSISTS OR IS SEVERE, GET MEDICAL CARE.

Precautions for Safe Handling and Use

______ Steps If Matl Released/Spill: ELIMINATE IGNITION SOURCES. USE APPROPRIATE PROTECTIVE EQUIPMENT. CONTAIN LEAK. PREVENT LEAK FROM ENTERING SEWER, WATER WAY, ETC. RECOVER AS LIQUID. REPORT SPILL IF APPROPRIATE.

Neutralizing Agent: NONE

Waste Disposal Method: DISPOSE I/A/W FEDERAL, STATE, LOCAL REGULATIONS. INCINERATION IS RECOMMENDED FOR DISPOSAL.

Precautions-Handling/Storing: STORE IN COOL AREA AWAY FROM OXIDIZERS AND IGNITION SOURCES. DETACHED STORAGE PREFERRED. GROUND CONTAINERS DURING TRANSFER.

Other Precautions: "EMPTY" CONTAINERS MAY CONTAINRESIDUE AND/OR FUMES WHICH ARE EXPLOSIVE. DO NOT CUT, WELD, ETC.

Control Measures

______ Respiratory Protection: NOT EXPECTED TO BE NECESSARY. USE NIOSH/MSHA

RESPIRATOR IF PRODUCT IS MISTED OT IF TLV/PEL IS EXCEEDED.

Ventilation: USE LOCAL EXHAUST TO MAINTAIN EXPOSURE BELOW TLV/PEL IFNORMAL ROOM VENTILATION IS IN SUFFICIENT.

Protective Gloves: RUBBER, PLASTIC, OR OTHER IMPERVIOUS

Eve Protection: SAFETY GLASSES OR SPLASH GOGGLES.

Other Protective Equipment: WEAR IMPERVIOUS CLOTHING TO PROTECT AGAINST PROLONGED/REPEATED CONTACT.

Work Hygienic Practices: USE GOOD INDUSTRIAL HYGIENE PRACTICE. AVOID UNNECESSARY CONTACT.

Suppl. Safety & Health Data: MSDS NO 52,309 SHELL CODE 23540.

Transportation Data

______ Transportation Action Code: Transportation Focal Point: D Trans Data Review Date: 89192

DOT PSN Code: GOA

DOT Symbol:

DOT Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE

DOT Class: 3

DOT ID Number: UN1863 DOT Pack Group: III

DOT Label: FLAMMABLE LIQUID DOT/DoD Exemption Number:

IMO PSN Code: HNZ

IMO Proper Shipping Name: FUEL OIL NO. 1

IMO Regulations Page Number: SEE 3375

IMO UN Number: 1223

IMO UN Class: 3.3

```
Report for NIIN: 010315816
IMO Subsidiary Risk Label: -
IATA PSN Code: MMF
IATA UN ID Number: 1863
IATA Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE
IATA UN Class: 3
IATA Subsidiary Risk Class:
IATA Label: FLAMMABLE LIQUID
AFI PSN Code: MMF
AFI Symbols:
AFI Prop. Shipping Name: FUEL, AVIATION, TURBINE ENGINE
AFI Class: 3
AFI ID Number: UN1863
AFI Pack Group: III
AFI Label: FLAMMABLE LIQUID
AFI Special Prov:
AFI Basic Pac Ref: 7-7
MMAC Code:
N.O.S. Shipping Name:
Additional Trans Data:
______
                         Disposal Data
______
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries Per NSN:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code New:
1st EPA Haz Wst Name New:
1st EPA Haz Wst Char New:
1st EPA Acute Hazard New:
2nd EPA Haz Wst Code New:
2nd EPA Haz Wst Name New:
2nd EPA Haz Wst Char New:
2nd EPA Acute Hazard New:
3rd EPA Haz Wst Code New:
3rd EPA Haz Wst Name New:
3rd EPA Haz Wst Char New:
3rd EPA Acute Hazard New:
______
                         Label Data
Label Required: YES
Technical Review Date:
Label Date:
MFR Label Number:
Label Status: F
Common Name:
Chronic Hazard: N/P
Signal Word:
```

Acute Health Hazard-None:

Report for NIIN: 010315816 Acute Health Hazard-Slight: Acute Health Hazard-Moderate: Acute Health Hazard-Severe: Contact Hazard-None: Contact Hazard-Slight: Contact Hazard-Moderate: Contact Hazard-Severe: Fire Hazard-None: Fire Hazard-Slight: Fire Hazard-Moderate: Fire Hazard-Severe: Reactivity Hazard-None: Reactivity Hazard-Slight: Reactivity Hazard-Moderate: Reactivity Hazard-Severe: Special Hazard Precautions: MAY BE POISONOUS IF INHALED OR ABSORBED THROUGH SKIN. VAPORS MAY CAUSE DIZZINESS OR SUFFOCATION. CONTACT MAY IRRITATE OR BURN SKIN AND EYES. FIRE MAY PRODUCE IRRITATING OR POISONOUS GASES. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION. Protect Eye: Protect Skin: Protect Respiratory: Label Name: SHELL CHEMICAL COMPANY A DIV. OF SHELL OIL co. Label Street: 1 SHELL PLAZA Label P.O. Box: 2463 Label City: HOUSTON Label State: TX

Label Zip Code: 77001 Label Country: US

Year Procured:

Label Emergency Number: 713-473-9461

REPLYTO ATTENTION OF

DEPARTMENT OF THE ARMY

SENECA ARMY DEPOT ACTIVITY 5786 STATE RTE 96, P.O. BOX 9 ROMULUS, NEW YORK 14541-0009



February 28, 2005

Engineering and Environmental Division

Mr. Charles McCann LEPC Coordinator Emergency Management Office 1 DiPronio Drive Waterloo, NY 13165

Enclosed is Seneca Army Depot Activity's SARA Tier II submission of 2004.

If there are any additional questions, please contact the undersigned at (607) 869-1309.

Enclosure

STEPHEN M. ABSOLOM Installation Manager

CF: NYSDEC Romulus Fire Department Ovid Fire Department

dikes and other saleguard mensures

DS-2 Sodium Hydroxide - Methyl Ell NON 6850-00-753-4827 6850-00-753-4870 6850-01-136-8888 er II Chemical In ttee (LEPC), yo tion, Albany offi spec gravily = 97.590 = 7,83 lbs per gallo : district are listed 109-86-4 2 METHOXYETHANOL = 2890 (28) 34,001,130 al, please contact: 1310-73-2 SODIUM HYDROXIDE = 290 (,02) 2284, 795 n the Tier II form: DICHLOROD FLUERO METTO ANE 75-71-8-6 (Golf)=300 (G R-12 116 + 118 3 - 1,000 each = 6,000 guller n@co.seneca.nv.u: B 117 2-1,000 = 2,000 galler B 123, 125, 331, 367 1-1,000 = 4,000 gallon B 333 + 360 2-500 gal each = 2,000 galler B 332+3/6 1-500 each = 1,000 gallon B146+357 1-250 each = 500 gallons
B142 2-250 Ex

If you have any questions or need any assistance, please feel free to call me.

Sincerely,

Charles F. McCann

Feb 15, 2004 DS-2 Sodium Hydroxide - Methyl Ellosobe NON 6850-00-753-4827 1.825 millorgallors 6850-00-753-4870 6850-01-136-8388 spec gravily = 97.590 = 7.83 lbs per gallon 109-86-4 2 METHOXYETHANOL = 2890 (.28) 34,001,130 1310-73-2 SODIUM HYDROXIDE = 290 (02) 2284, 795 DICHLOROD FLUOROMETHANE 75-71-8-6 (Soll-)=300 Cl B 116 + 118 3 - 1,000 each = 6,000 gullon VB 117 2-1,000 = 2,000 galler B 123, 125, 331, 367 1-1,000 = 4,000 gallon 316-3-500 B 333 + 360 2-500 gal each = 2,000 galler 2-100 B | 332+ 316) 1-500 each = 1,000 gallers 15,500 gellow nay

If you have any questions or need any assistance, please feel free to call me.

Sincerely,

Charles F. McCann



DEPARTMENT OF THE ARMY

SENECA ARMY DEPOT ACTIVITY 5786 STATE RTE 96, P.O. BOX 9 ROMULUS, NEW YORK 14541-0009

Feb 28, 2005



Engineering and Environmental Division

Mr. Charles McCann LEPC Coordinator Emergency Management Office 1 DiPronio Drive Waterloo, NY 13165

Enclosed is Seneca Army Depot Activity's SARA Tier II submission of 2002. 2004

If there are any additional questions, please contact Mr. Thomas Grasek at (607) 869-1532.

Enclosure

STEPHEN M. ABSOLOM

Commander's Representative

CF: NYSDEC Romulus Fire Department Ovid Fire Department

		COMPLETE THIS SECTION ON DELIVERY
		THE SECTION DIV DE
		COMPLETE THIS SEE
		COMPLETE THIS DAY Agent Addressee
	TOTION	A Signature Addressee
	THIS SECTION	
	SENDER: COMPLETE THIS SECTION	A. Significant C. Date of Delivery
	SENDER: COMPLETE	X MM ITTE
	1, 2, and 3. is desired.	printed Warrie
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	if Restricted Laddress on the	B. Hess
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PS Form 3811, August 2001

ROMULUS AND OVID FIRE DEPARTMENTS Revised June 1990 Facility Identification Form Approved OMB No. 2050-0072 AND THE REST OF THE REST Owner/Operator Name Seneca Army Depot Activity C 4 Mr. 6 M. (607) 869-1309 Tier Two Installation Manager 5786 State Route 96 **EMERGENCY** P.O. Box 9, Romulus, NY 14541 Romulus Seneca AND 14541 HAZARDOUS CHEMICAL Emergency Contact SIC Code 9 1 9 9 Environmental Stephen M. Absolom Engineer . Specific 1607 1 869-1309 Information 1315 1539-8726 by Chemical FOR Da OFFICIAL ONLY Date Received Important: Read all instructions before completing form Reporting Period From January 1 to December 31, 19 Check it information below is identical to the information submitted test year. Physical **Chemical Description** Storage Codes and Locations and Health Inventory (Non-Confidential) Hazards follows hit its stooks Storage Locations Max. Dally Amount (code) Building 374 Sudden Release Chem. Name Dichlorodifluoromethan of Pressure 0 2 Avg. Dally Amount (code) Reactivity Check all X Immediate (acute) that apply: 6 5 No. of Days On-alte (days) Delayed (chronic) EHS **EHS Name** Max, Dally Amount (oode) Buildings 356 & 357 Sudden Release Chem. Name 2-Methoxyethano Avg, Dally Amount (code) Reactivity Check all Immediate (acute) that apply: Delayed (chronic) No. of Days EHS **EHS Name** On-elte (days) CAS 9 8 Max. Dally Amount (oode) Bldgs 116&118, 3-1,000 gal. Chem. Name Propage Sudden Release X of Pressure Bldg 2-1,000 gal. Reactivity Avg. Dally Amount (code) Bldgs 123,125,331&367 1-1,000 gal. Check all x Immediate (acute) that apply: Bldgs 333&360 EHS 5 No. of Deys On-elle (days) Delayed (chronic) 2-500 gal **EHS Name** Bldgs 332&316 1-500 gal Bldgs 146&357 1-250 gal Certification (Read and sign after completing all sections) Bldg 142 2-250 gal. I certify under ponalty of law that I have personally examined and armitarists with the information submitted in pages one through on my inquiry of those individuals responsible for obtaining the information, I believe that the aubmitted information is true, accurate, and complete. I have attached a site plan Stephen M. Absolom, Installation Manager I have attached a lat of site Name and official title of owner/operator OR owner/operator's authorized appresentative coordinate abbreviations

Signature

I have attached a description of

dikes and other salequard measures

Date signed

Revised June 1990		Konon	US AND OVID FIRE	DEFARIMENTS		2 2 .	69
Tier Two EMERGENCY AND HAZARDOUS	Facility Identification Name Seneca Army Depot 5786 State Route City Romulus County	96	NY Zp 14541		Box 9,	Page 2 of 2 Form Approved OMB No. 2050- (607) 869-1309 n Manager Romulus, NY 14541-0009	Lè-
CHEMICAL INVENTORY SIC Code 9 1 9 9		Dun & Brad	Emergency Contact Name Stephen M. Absolom Phone (607 869-1309 Environmental Title Engineer				
Information by Chemical	POR Da Dala Received	OFFICIAL			9-1309	24 Hr. Phone £315 1539-8	726
Important: R	ead all instructions before com	pleting form Re	porting Period From	Phone ()		24 Hr. Phone ()	-
	ical Description	Physic and He Hazar (check at the	cal eith inve	ntory	Container Type Temperature Pressure	Check if information below is identical to the information submitted test year. Storage Codes and Locations (Non-Confidential).	1
CAS 1	310732 Sodium Hydroxide	ade X Fire Sudden B	0 4 Max. D Amoun	ally	8F F &	Storage Locations Bldgs 356 & 357	4
Check all that apply: Pure		Col Pressure Reactivity X Immediate Delayed (ci	0 4 Avg. D Amoun	ally it (code) of Days -elta (days)			
Chem. Name		rde Fire Sudden Ru of Pressure Reactivity Immediate	Avg. D	nlly 1 (oode) nlly 1 (oode)			
EHS Name	Mix Solid Liquid Gas	EHS Delayed (ci		of Days elie (days)			
CAS		ret Fire Sudden Re of Pressure		ally t (code)			╬
Check all shall apply: Pure	Mix Solid Liquid Gas	EHS Reactivity Immorate (vonic) No.	illy I (code) of Days -elte (days)			5
Stephen M.	Read and sign after completing all sections that I have personally examined and am lar dividuals responsible for obtaining the information Absolom, Installation	n, I believe that the submitted into	d in pages one through a	0.000000000000000000000000000000000000		Optional Attachments I have attached a site plan I have attached a list of site	L
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REPLY TO ATTENTION OF

DEPARTMENT OF THE ARMY

SENECA ARMY DEPOT ACTIVITY 5786 STATE RTE 96, P.O. BOX 9 ROMULUS, NEW YORK 14541-0009



March 3, 2003

Engineering and Environmental Division

Mr. Charles McCann LEPC Coordinator Emergency Management Office 1 DiPronio Drive Waterloo, NY 13165

Enclosed is Seneca Army Depot Activity's SARA Tier II submission of 2002.

If there are any additional questions, please contact Mr. Thomas Grasek at (607) 869-1532.

Enclosure

Commander's Representative

CF: NYSDEC Romulus Fire Department Ovid Fire Department

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SENDER: COMPLE	ETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
 item 4 if Restricte Print your name a so that we can ret 	, 2, and 3. Also complete d Delivery is desired. nd address on the reverse turn the card to you. o the back of the mailpiece, pace permits.	A. Signature A. A. Signature Agent Addressee B. Received by (Printed Name) C. Date of Delivery D. Is delivery address different from item 1? Yes
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Revised June 1990 Facility Identification Page — d Form Approved OMB No. 2050-0072 Owner/Operator Name **Tier Two EMERGENCY** Mail Address HAZARDOUS CHEMICAL Emergency Contact Specific Information by Chemical OFFICIAL USE Important: Read all instructions before completing form Reporting Period From January 1 to December 31, 19 Check if information below is identical to the information submitted last year, Physical **Chemical Description** and Health Storage Codes and Locations (Non-Confidential) Inventory Hazards (check all that apply) Storage Locations Max. Dally Amount (code) Sudden Release of Pressure Chem. Name Avg. Dally Amount (code) Reactivity Check all Immediate (acute) that apply: No. of Days On-eite (days) Delayed (chronic) **EHS Name** EHS CAS Max, Dally Amount (code) Chem. Name Sudden Release of Pressure Avg, Dally Amount (pode) Reactivity Check all Immediate (acute) that apply: No, of Days On-elle (days) Delayed (chronic) **EHS Name** CAS Max. Delly Amount (code) Chem. Name Sudden Release of Pressure Reactivity Avg. Dally Amount (code) Check all that apply: Immediate (acute) Delayed (chronic) No. of Days On-elte (days) **EHS Name** (Read and sign after completing all sections) I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through ______ and the on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. Optional Attachments I have attached a site plan I have attached a list of site Name and official title of owner/operator OR owner/operator's authorized representative coordinate abbreviations I have attached a description of Date signed dikes and other saleguard measures

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Revised June 1990 Facility Identification Form Approved OMB No. 2050-0072 Owner/Operator Name **Tier Two EMERGENCY** AND HAZARDOUS CHEMICAL **Emergency Contact** Specific Information by Chemical FOR OFFICIAL ONLY Important: Read all instructions before completing form Reporting Period From January 1 to December 31, 19 Check if information below is identical to the information submitted last year. Physical **Chemical Description** and Health Storage Codes and Locations (Non-Confidential) Inventory Hazards (check all that apply) Storage Locations Max. Dally Amount (code) Chem. Name Sudden Release of Pressure Avg. Dally Amount (code) Reactivity Check all Immediate (acute) that apply: No. of Days On-elte (days) Delayed (chronic) **EHS Name** Max, Daily Amount (code) Chem. Name Sudden Release of Pressure Reactivity Avg, Dally Amount (code) Check all Immediate (acute) that apply: Delayed (chronic) No. of Days Ott-elfe (days) **EHS Name** CAS Max. Delly Chem. Name Amount (code) Sudden Release Reactivity Avg. Dally Amount (code) Check all Immediate (acute) Delayed (chronic) No. of Days On-elte (days) **EHS Name** (Read and sign after completing all sections) I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through ______ and to on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I have attached a site plan I have attached a list of site Name and official title of owner/operator OR owner/operator's authorized representative coordinate abbreviations Signature I have attached a description of Date signed dikes and other salequard

Revised June 1990 Facility Identification Page ____ d Form Approved OMB No. 2050-0072 Owner/Operator Name **Tier Two EMERGENCY** AND HAZARDOUS County CHEMICAL **Emergency Contact** Specific Information by Chemical OFFICIAL USE Important: Read all instructions before completing form Reporting Period From January 1 to December 31, 19 Check if information below is identical to the information submitted last year. **Chemical Description Physical** and Health Storage Codes and Locations (Non-Confidential) Inventory Hazards foheth all that apply) Storage Locations Max. Dally Amount (code) Chem. Name Sudden Release of Pressure Avg. Dally Amount (code) Reactivity Check all Immediate (acute) that apply: No. of Deys On-eite (days) Delayed (chronic) **EHS Name** Max, Dally Amount (code) Chem. Name Sudden Release Avg, Dally Amount (oode) Reactivity Check all Immediate (acute) that apply: No, of Days On-eite (days) Delayed (chronic) **EHS Name** Max. Delly Chem. Name Amount (code) Sudden Release Reactivity Avg. Dally Amount (code) Check all that apply: Immediate (acute) Delayed (chronic) No. of Days On-elte (days) **EHS Name** Certification (Read and sign after completing all sections) I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through _____ and the on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I have attached a site plan I have attached a list of site Name and official title of owner/operator OR owner/operator's authorized representative coordinate abbreviations Signature I have attached a description of Date signed

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SENECA ARMY DEPOT ACTIVITY 5786 STATE RTE 96, P.O. BOX 9 ROMULUS, NEW YORK 14541-0009



February 14, 2002

Engineering and Environmental Division

Mr. Charles McCann LEPC Coordinator Emergency Management Office 1 DiPronio Drive Waterloo, NY 13165

Enclosed is Seneca Army Depot Activity's SARA Tier II submission of 2001.

If there are any additional questions, please contact Mr. Thomas Grasek at (607) 869-1532.

Enclosure

STEPHEN M. ABSOLOM

Commander's Representative

CF: NYSDEC Romulus Fire Department

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Revised June 1990)			*	Page ol	pages
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Rovisod June 1990 Facility Identification Page ____ d I orm Approved OMII No. 2050 (072 Owner/Operator Name Tier Two EMERGENCY HAZARDOUS CHEMICAL Emergency Contact Oun & Brad Number Specific Information by Chemical FOR OFFICIAL USE Date Received Important: Read all instructions before completing form Reporting Period From January 1 to December 31, 19 Check If information below is identical to the information submitted last year. Physical **Chemical Description** and Health Storage Codes and Locations (Non-Confidential) Inventory Hazards Optional (check all that apply) Storage Locations CAS Max. Dally Fire Amount (code) Chem. Name Sudden Release of Pressure Avg. Dally Amount (code) Reactivity Check all Immediate (acute) that apply No. of Days On-site (days) Delayed (chronic) FHS **EHS Name** CAS Max, Dally Amount (code) Chem. Name Sudden Release of Pressure Reactivity Avg. Dally Amount (code) Chech all Immediate (acute) that apply No, of Days Off-elle (days) Delayed (chronic) **EHS Name** CAS Max. Dally Chom. Name Amount (code) Sudden Release of Pressure Reactivity Avg. Dally Amount (code) Check all Immediate (acute) that apply EHS Delayed (chronic) No. of Days On-elte (days) **EHS Name** (Read and sign after completing all sections) I certify under penalty of law that I have personally examined and am farmer with the information submitted in pages one through on my inquiry of those individuals responsible for obtaining the information. I believe that the submitted information is true, accurate, and complete. Optional Attachments I have attached a site plan I have attached a list of site Name and official title of owner/operator OR owner/operator's authorized representative coordinate abbreviations Signature I have attached a description of Date signed dikes and office saloguard moustines

Rovisod June 1990 Facility Identification Page ____ ul I orm Approved OMII No. 2050 0072 Owner/Operator Name Tier Two 在 2021年 2021年 日本 EMERGENCY HAZARDOUS CHEMICAL INVENTORY Emergency Contact Specific Information by Chemical FOR 24 Hr. Phone OFFICIAL. USE ONLY Date Received Important: Read all instructions before completing form Reporting Period From January 1 to December 31, 19 Check il information below is identical to the information submitted last year. Physical **Chemical Description** and Health Storage Codes and Locations Container Type Inventory Hazards (Non-Confidential) Optional (check all the apply) Storage Locations Max. Dally Fire Amount (pode) Chem. Name Sudden Release of Pressure Reactivity Avg. Dally Amount (code) Check all that apply: Immediate (acute) No. of Days On-eite (days) Delayed (chronic) **EHS Name** EHS CAS Max, Dally Amount (code) Chem. Name Sudden Release of Pressure Reactivity Avg. Dally Check all Amount (pade) Immediate (acute) that apply Delayed (chronic) No, of Days Off-elle (days) **EHS Name** Max. Dally Amount (code) Chom. Name Sudden Release of Pressure Reactivity Avg. Dally Amount (code) Check all that apply Immediate (acute) EHS Delayed (chronic) No. of Days On-elle (days) **EHS Name** Certification (Read and sign after completing all sections) I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through ______, and that based on my inquiry of those individuals responsible for obtaining the information. I believe that the submitted information is true, accurate, and complete. I have attached a site plan I have attached a list of site Name and official fills of owner/operator OR owner/operator's authorized representative coordinate abbreviations Signature I have attached a description of Date signed dikes and other saloguard measures



SENECA ARMY DEPOT ACTIVITY 5786 STATE RTE 96 ROMULUS, NEW YORK 14541-5001



February 27, 2001

Engineering and Environmental Division

Mr. Charles McCann LEPC Coordinator 1 Di Pronio Drive Waterloo, New York 13165

Enclosed is Seneca Army Depot Activity's SARA Tier II submission of 2000.

For additional information and coordination on this matter, contact Mr. Thomas Grasek at (607) 869-1532.

Sincerely,

Enclosure

STEPHEN M. ABSOLOM Commander's Representative

CF: NYSDEC Romulus Fire Department

Signature

I have attached a description of

dikes and other saleswant a

Date sugned



SENECA ARMY DEPOT ACTIVITY 5786 STATE RTE 96 ROMULUS, NEW YORK 14541-5001



March 14, 2000

Engineering and Environmental Division

Mr. Charles McCann LEPC Coordinator 1 Di Pronio Drive

Waterloo, New York 13165

Enclosed is Seneca Army Depot Activity's SARA Tier II submission of 1999.

For additional information and coordination on this matter, contact Mr. Thomas Grasek at (607) 869-1532.

Sincerely,

Enclosure

BRIAN K. FRANK LTC, U. S. Army Commanding Officer 10m P 404 910 528

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail (See reverse)
Sent to
Sent to
Street & Number
Post Office, State, & ZIP Code
WATERLOO, NY 13/65
Postage
Certified Fee
Restricted Delivery Fee
Restricted Delivery Fee
Return Receipt Showing to Whom, Date, & Addressee's Address
TOTAL Postage & Fees

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607,869-1206 Page 2 d 3 pages Form Approved CMB No. 2050-0072 24 Hr. Phone 1607) 869-1448 Storage Codes and Locations I have attached a description of dikes and other saleguard measures Check I Normation below is identical to the information Building 120 Underground I have attached a list of site coordinate abbreviations 14541 Building 120 Underground Building 120 Underground I have attached a site pi Storage Locations Non-Confidential) 24 Hr. Phone (5786 State Rte 96, Romulus, NY Optional Attact Gasoline Tank Gasoline Tank Gasoline Tank Commander SEDA 15 MAROD Date signed 869-1448 Name Duty Officer Owner/Operator Name Container Type B 1 B 1 B 1 Emergency Contact From January 1 to December 31, 19 Phone (607) Name Mail Address 3 65 Degle (days) R. G. S. Carre 365 200 and complete. Phone (Mar: Dally Amount (code) Mar Dally Amount (Code) 012 Are December 1 Mar Dally March 1 (1992) O 2 AVG. Dally nventory Amount (seds Zp 14541 lowity under penalty of law that I have personally examined and am lamilar with the information authmitted in pages one through on my inquiry of those individuals responsible for obtaining the information, Ibelieve that the submitted information is true, and BRIAN K. FRANK, LTC, U.S. ATMY, Continuanding Officer 0 2 0 2 Reporting Period County Seneca State NY President Taxands Reactivity Dalayed (chronic) Delayed (ohronic) Immediate (acute) Sudden Release of Pressure Introdute (acute Delayed (chronic) Reactivity Reactivity X Fire × × × × × Name Seneca Army Depot Activity Important: Read all instructions before completing form Dan & Bred Number Name and official little of owner/operator OR owner/operator's authorized representative Trade Certification (Read and sign after completing all sections) Secret Management Prode Secret Street 5786 State Route 96 Facility Identification Date Received Chemical Description 2 3 SIC Code 9 1 9 9 2 0 7 8 4 3 Ö City Bomiling PFOR VIEW ONLY Toluene 1330 Xvlene Benzine 0 8 7 1 × × Chem. Name Chem. Name Revised June 1990 Tier Two Chem. Name EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY **EHS Name EHS Name** EHS Name Specific Information by Chemical that apply: Cleck all CAS CAS CAS



SENECA COUNTY EMERGENCY MANAGEMENT OFFICE FIRE COORDINATOR/STOP-DWI



CHARLES F. McCANN, Director / Coordinator One DiPronio Drive Waterloo, NY 13165 cmccann@co.seneca.ny.u' 315.539.1756 (Phone) 315.539.9150 (Fax)

February 1, 2002

Dear Facility Coordinator:

The regulations as established under SARA Title III requires that annual Tier I or Tier II Chemical Inventory Forms be filed annually by March 1st with the Local Emergency Planning Committee, (LEPC), your local fire department and New York State - Department of Environmental Conservation, Albany office.

The Seneca County LEPC requires that only Tier II forms are filed and that your fire district be listed on the front of the form. A Tier II from is enclosed for your use. Please photocopy, if additional forms are required or contact Mr. Charles F. McCann, Seneca County Emergency Management Director, at 315-539-1757.

If you claim the chemical to be a trade secret or its storage location to be confidential, please contact this office for additional forms and guidance.

The fire department has requested that all chemicals be listed in alphabetical order on the Tier II forms to facilitate their filing and identification procedures.

Industry and Municipalities

Chemicals to be reported by industry and municipalities are the listed Extremely Hazardous Substances under Section 302 of Title III and all chemicals classified as hazardous under the OSHA Hazardous Communications Standard and were present at any time in 2000.

Agricultural

Chemicals to be reported by Agriculture are those listed as extremely hazardous substances. No additional chemicals are required since agricultural is exempt from the OSHA Hazard Communication Standard if the farm employs less than 10 full time employees.

It is requested that a site plan of the facility, showing the storage area of the chemicals, be included with the Tier II form.

The mailing address for the LEPC:

Mr. Charles F. McCann LEPC Coordinator Emergency Management Office 1 DiPronio Drive Waterloo, New York 13165

The mailing address for the NYS Department of Environmental Conservation:

NYS DEC Bureau of Spill Prevention and Release 50 Wolf Road, Room 326 Albany, New York 12233

If you have any questions or need any assistance, please feel free to call me.

Sincerely,

Charles F. McCann

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Hovisod Juno 1990 Page 0 Form Approved OMII No. 2050, 0072 Facility Identification Owner/Operator Name Tier Two Name **EMERGENCY** AND HAZARDOUS CHEMICAL Emergency Contact INVENTORY Specific Information by Chemical FOR IO s OFFICIAL USE Important: Read all instructions before completing form Reporting Period Check it information below is identical to the information submitted last year. From January 1 to December 31, 19 Physical **Chemical Description** Storage Codes and Locations and Health Container Type Inventory (Non-Confidential) Hazards (check all that apply) Storage Locations Max. Dally Amount (code) Sudden Release Chem. Name of Pressure Avg. Dally Amount (code) Reactivity Check all Immediate (acute) that apply No. of Days On-elte (days) Delayed (chronic) EHS **EHS Name** Max, Dally Amount (code) Sudden Release Chem. Name of Pressure Avg. Dally Heactivity Amount (code) Check all Immediate (acute) that apply: No, of Days On-elle (days) Delayed (chronic) EHS Name Max. Dally Amount (code) Chom. Name Sudden Release Avg. Dally Amount (code) Reactivity Check all Immediate (acute) that apply. No. of Days Delayed (chronic) EHS Name On-elte (days) (Read and sign after completing all sections) I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through ______, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. Optional Attachments I have attached a site plan I have attached a list of sae coordinate abbreviations Name and official title of owner/operator OR owner/operator's authorized representative I have attached a description of Signature Date signed dikes and other salequard measures



SENECA ARMY DEPOT ACTIVITY 5786 STATE RTE 96 ROMULUS, NEW YORK 14541-5001



SIOSE-IE

23 June 1999

MEMORANDUM FOR:

Commander, HQ, Industrial Operations Command,

Environmental Programs Office,

ATTN: AMSIO-IBB-ENV (Reita A. Kuster),

Rock Island, IL 61299-7190

SUBJECT: Submission of Calendar Year 1998 Toxic Release Inventory (TRI) Reports

- 1. Reference email, HQ IOC, 17 June 1999, subject: Emergency Planning and Community Right-to-Know Act, Toxic Release Inventory Reporting for CY 1998.
- 2. Seneca Army Depot Activity (SEDA) is not required to fill out Form R for Toxic Releases. SEDA does not manufacture nor process toxic chemicals on the Installation. SEDA is only a storage Depot. We are also slated for closure under BRAC in July 2001.

3. The point of contact at this installation is Mark R. Paprocki at DSN 489-1532.

bonald ¢. olson

Commanding

SIOSE-IE

23 June 1999

MEMORANDUM FOR: Commander, HQ, Industrial Operations Command,

Environmental Programs Office,

ATTN: AMSIO-IBB-ENV (Reita A. Kuster),

Rock Island, IL 61299-7190

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DONALD C. OLSON LTC, OD Commanding

RBN FISMA Englenv DITM

Subject: Emergency Planning and Community Right-to-Know Act, Toxic Release Inventory Reporting for CY 1998 Date: Thu, 17 Jun 1999 12:20:31 -0500 From: "Kuster, Reita" < Kuster @ioc.army.mil>

To: "Foss, David" <FossD@ria.army.mil>, "Wigle, Pam" <WigleP@ioc.army.mil>, "Norton, Darlene" <NortonD@ioc.army.mil>,

""phillip_vick@pba-emh1.army.mil" <phillip_vick@pba-emh1.army.mil>,

"'Ggreen@wva-emh1.army.mil" <Ggreen@wva-emh1.army.mil>,

"Dgj156@crane-emh1.army.mil" <Dgj156@crane-emh1.army.mil>,

"cpshuster@lcaap.com" <cpshuster@lcaap.com>,

"Dself@lonestar-ex.army.mil" <Dself@lonestar-ex.army.mil>,

"elliott_darrell@mcalestr-emh1.army.mil" <elliott_darrell@mcalestr-emh1.army.mil>,

"'pbrew@americanordnance.com'" <pbrew@americanordnance.com>,

"Shelley_barker@atk.com" <Shelley_barker@atk.com>,

"Fordham, David C" <FordhamD2@ioc.army.mil>, "Short, Joann" <ShortJ@ioc.army.mil>, "Bahan, Joseph" <BahanJ@ioc.army.mil>, "Holz, Arthur M" <HolzA@ioc.army.mil>,

"Parish, Glen" <ParishG@ioc.army.mil>, "Muckelrath, Lynn" <MuckelrathL@ioc.army.mil>,

"Williams, Doyle" <WilliamsD@ioc.army.mil>,

"Patterson, Mark" <PattersonM@ioc.army.mil>, "Gansel, James E" <GanselJ@ioc.army.mil>,

"Tuttle, Tim" <TuttleT@ioc.army.mil>, "Burns, Ralph" <BurnsR2@ioc.army.mil>,

"Fix, Michael R" <FixM@ioc.army.mil>,

"Volunteer-aap@ria-emh2.army.mil" <Volunteer-aap@ria-emh2.army.mil>,

"thazle@bgad-exch1.army.mil" <thazle@bgad-exch1.army.mil>,

"Millsap, Herman" <MillsapH@ioc.army.mil>, "Clarke, John" <ClarkeJ@ioc.army.mil>,

"Paprockim@seneca-hp.army.mil" <Paprockim@seneca-hp.army.mil>,

"turnert@tooele-emh2.army.mil" <turnert@tooele-emh2.army.mil>,

MISSISSIPPI-AAP < MISSISSIPPI-AAP@ioc.army.mil>

ALL:

This is a heads up - the hard copy correspondence is being coordinated through channels. The filing date for submitting CY1998 TRI reports is 1 Jul 99. The required form, instructions, and guidance documents are available through the internet at http://www.epa.gov/opptintr/tri/index.htm.

In order for DoD Government Owned Contractor Operated (GOCO) facilities to be properly counted, both the contractor and the Federal facility must report. The GOCO TRI report is completed and signed in accordance with U.S. Environmental Protection Agency guidance. The Federal facility TRI report is completed in accordance with DoD guidance and signed by the responsible senior Army management official. Installations will not use range codes or report TRI range emissions.

You are required to submit an electronic copy of your installation's CY 1998 TRI report to the U.S. EPA by 1 Jul 99. Please copy furnish this office, HQ, IOC, ATTN: AMSIO-IBB-ENV, Rock Island, IL 61299-6000 an electronic copy also. I will be providing a copy to your installation teams here at IOC.

If you have any questions please call me. The POC for this action is Mrs. Reita Kuster, AMSIO-IBB-ENV, DSN 793-1892, email: kusterr@ioc.army.mil.

Reita A. Kuster HQ, Industrial Operations Command Environmental Programs Office AMSIO-IBB-ENV DSN 793-1892/FAX 1457, Comm 309-782-1892 Email: kusterr@ioc.army.mil SIOSE-IE

13 August, 1997

MEMORANDUM FOR: Commander, HQ, Industrial Operations Command, Environmental Programs Office, ATTN: AMSIO-IBB-ENV(Reita A. Kuster), Rock Island, IL 61299-7190

SUBJECT: Submission of Calendar Year 1998 Toxic Release Inventory (TRI) Reports

- 1. Seneca Army Depot Activity (SEDA) is not required to fill out Form R for Toxic Releases. SEDA does not manufacture or process toxic chemicals on the Installation. SEDA is only a storage Depot. We are also slated for closure under BRAC in July 2001.
- 2. POC is Mark R. Paprocki, DSN 489-1532.

STEPHEN M. ABSOLOM Chief, Engineering/Environmental Division

	**************************************				Page of	
Tier Two	Facility Identification Name		Owner/Operator Na	ime	Page of Form Approved OMB No. 2050-007	pages 72
EMERGENCY AND	Street County Ste	le 7n	Name Mail Address		Phone ()	
HAZARDOUS CHEMICAL INVENTORY	SIC Code Dun & Brad Number		Emergency Contac	al		6000
Specific Information by Chemical	FOR D#		Name		Tale	eften.
	OFFICIAL		Name		24 Hr. Phone ()	
Important: Re	ed all instruction L.C.	Reporting Period From Ja	Phone ()		Title	
			nuary 1 to December 31, 19		Continue all Val	
Confid	lential Location In	formation	Sheet	Comminer Type Temperatis Pressure	Storage Codes and Locations (Confidential) Storage Locations	Optional
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CAS #	Chem.	¥	9			
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CAS a	Chern.					
	Name			FIF		
Certification ((Read and sign after completing all sections)				Continued are	Ľ
on my inquiry of those in	I law that I have personally examined and am familiar with the information andividuals responsible for obtaining the information, I believe that the submit	ubmitted in pages one through tted information is true, accurate, and com	, and that based plate.		Optional Attachments I have stached a site plan I have stached a list of site coordinate abbreviations	

Form Approved OMB No. 25,50-0072 Phone () Title	Tate 24 Ht. Phone	ATEST TOTAL			Optional Attachments have stached a sie plan have stached a sie plan have stached a sie plan have stached a sie o sie
Tier Two Surver AND HAZARDOUS CHY AND HAZARDOUS CHY Muster Surve Name Mail Address Mail Address	Location Information Sheet \$\frac{1}{5}\$	eck, triob	GAS # Chem. Name	CAS o Chem. Name	Castification (Read and sign after completing all sections) Loetly under penalty of law that I have personally examined and am familiar with the information submitted in pages one through on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

	Facility Identification		- Hopking and the second			9		Page 1 4 3	Dane
Tier Two EMERGENCY AND HAZARDOUS	Name SENECA ARMY DEP Street 5786 STATE ROUTE City ROMULUS County SEN	OT ACTIVITY 96 ECA STATE NY	z _p 14541	Owner/Operator Name Mail Address	Name 0 MM A 786 S	VOER S		607 869 Phone 14541	
CHEMICAL INVENTORY Specific Information by Chemical	SIC Code 9 / 9 9 Dun & Brad Number FOR DFFICIAL USE ONLY Date Received			Emergency Con Name	lact OFF	CFR	24 Hr.	Title	N. C.
Important: Re	ead all instructions before completing f	orm Reporting	Period From Ju	muary 1 to December 31,	19	Check	If information below	le identical to the information	
Chem	Ical Description	Physical and Health Hazards	La constant	ntory	Container Type:	Stora		and Locations (Idential)	Dankform
Check all shar apply: EHS Name	ChbrodifLuoremethane Mix Solid Liquid Gas Elis	Sudden Release of Pressure Reactivity Immediate (acute) Delayed (chronic)	OJ Amoun OJ Avg. Di Amoun OJ Avg. Di Amoun OJ On	ily (code)	L 2.		niw6 374	AND AND ADDRESS OF THE PARTY OF	
CAS	109864 ITENDE	Fire Sudden Release of Pressure Reactivity Immediate (acute) Delayed (chronic)	OS Avg. Da Amount OS Avg. Da Amount 365 No.	lly (pade)	FI	4 BUILL	01NG 351	6 + 357	
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ime and official title of own	ner/operator OR owner/operator's authorized representative	Sig.	nature		Date sig	-	_ coord	inate abbreviations a attached a description of and other saleguard measures	

I have attached a description of

dikes and other salequard measures

Date signed

dikes and other saleguard measures

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1-160ll =180 lbz

- 1-150lb = 750 - 5-150lb = 750 - 5-150lb = 200lba

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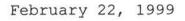
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39

108-88-3 TOLVENE



SENECA ARMY DEPOT ACTIVITY 5786 STATE RTE 96 ROMULUS, NEW YORK 14541-5001





Engineering and Environmental Division

NYS Department of Environmental
Conservation
Bureau of Spill Prevention and Release
50 Wolf Road, Room 326
Albany, New York 12233

Enclosed is Seneca Army Depot Activity's SARA Tier II submission for 1998.

For additional information and coordination on this matter, contact Mr. Michael Stofka at (607) 869-1532.

Sincerely,

Enclosure

DONALD C. OLSON LTC, U.S. Army Commanding Officer

File : Sava 88 de Include Tier Two 1-8

19 February, 1999

Installation Management Division

NYS Department of Environmental Conservation Bureau of Spill Prevention and Release 50 Wolf Road, Room 326 Albany, New York 12233

Gentlemen:

Enclosed is Seneca Army Depot Activity's SARA Tier II submission for 1998.

For additional information and coordination on this matter, contact Mr. Michael Stofka, Seneca Army Depot Activity, 5786 State Route 96, ATTN: SIOSE-IE, Roumulus, NY 14541-5001, or telephone (607) 869-1532.

Sincerely,

DONALD C. OLSON LTC,OD Commanding

Facility Identification Owner/Operator Name Name SENECA ARMY DEPOT Activity
Street 5786 State Route 96 Name Commander SEDA Phone (207-84)-1206 Mail Address 5 786 St. Pt 96, Rome 65 NY, 14541 **Tier Two EMERGENCY** HAZARDOUS CHEMICAL **Emergency Contact** Oun & Brad Number Specific Information by Chemical FOR Ds OFFICIAL ONLY Important: Read all instructions before completing form Reporting Period Check II information below is identical to the information submitted last year. From January 1 to December 31, 19 **Confidential Location Information Sheet** Storage Codes and Locations (Confidential) Storage Locations Name Dichloro difluoro methane Name Ferric Chloride Building 356,357 Certification (Read and sign after completing all sections) **Optional Attachments** I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I have attached a site plan I have attached a list of site coordinate abbreviations

Facility Identification Owner/Operator Name Name SENECA ARMY DEpot Activity
Street 5786 State Route 96 Name COMMONDER SEPA Phone 607-84-1206
Mail Address 5786 St. Pt 96, Roma 65, NY, 14541 Tier Two **EMERGENCY** HAZARDOUS CHEMICAL **Emergency Contact** INVENTORY Specific Information by Chemical FOR OFFICIAL ONLY Important: Read all instructions before completing form Reporting Period From January 1 to December 31, 19 **Confidential Location Information Sheet** Storage Codes and Locations (Confidential) Storage Locations 1310 23 Z Chern Sodium Hydroxide Chem. Sulfuric Acid Chern. To Luene (Read and sign after completing all sections) **Optional Attachments** I certify under penalty of law that I have personally examined and am (arrillar with the information submitted in pages one through on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I have attached a site plan I have attached a list of site coordinate abbreviations

Facility Identification Owner/Operator Name Name SENECA ARMY DEPOT Activity
Street 5786 State Route 96 Name Counting ader SEDA Phone 607-869-1206
Mail Address 5786 St. Pt 96, Romules NY, 14541 **Tier Two EMERGENCY** HAZARDOUS CHEMICAL **Emergency Contact** INVENTORY Specific Information by Chemical FOR OFFICIAL ONLY Important: Read all instructions before completing form Reporting Period From January 1 to December 31, 19 Check II information below is identical to the information submitted leat year. **Confidential Location Information Sheet** Storage Codes and Locations (Confidential) Storage Locations (Read and sign after completing all sections) **Optional Attachments** I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I have attached a site plan

I have attached a list of site

					Page 8 of 8 pages
	Facility Identification		Owner/Operator Na	Ime	Form Approved OMB No. 2050-0072
Tier Two	Name SENECA HEM	Depot Activity			
EMERGENCY	Street 5786 State	Coute 96	Mail Address 578	MANANDER SEPA	Phone 607-869-1206
AND HAZARDOUS	City <u>Leaving U.S.</u> County	Seneca Sino NY To 14541		147. 14347	
CHEMICAL	SIC Code 9 / 9 9	un & Brad Number	Emergency Contac	ol .	A SACRAGE CONTRACTOR LA SACRA
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January 1999

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January 1999

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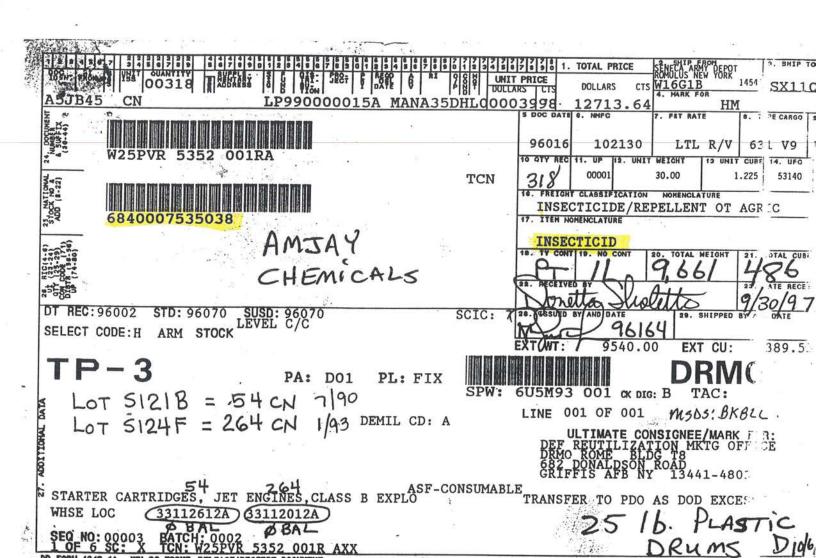
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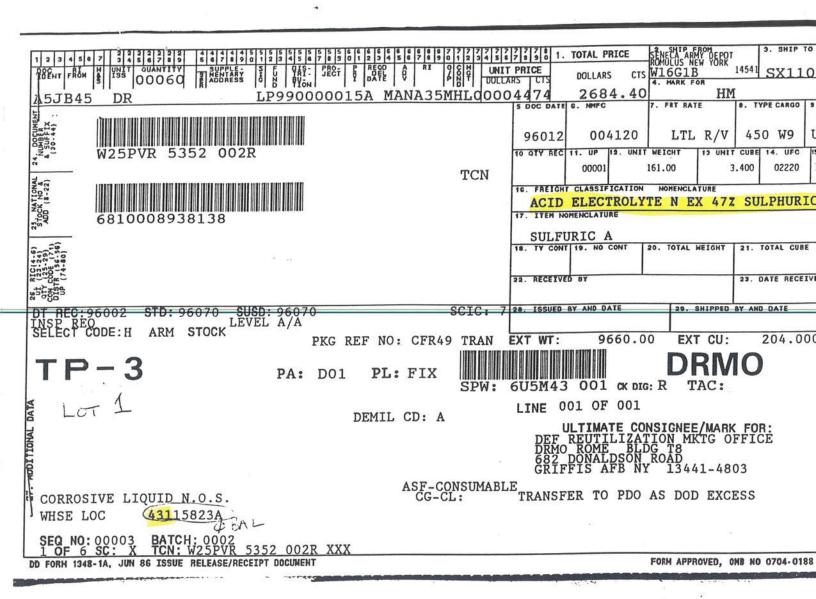
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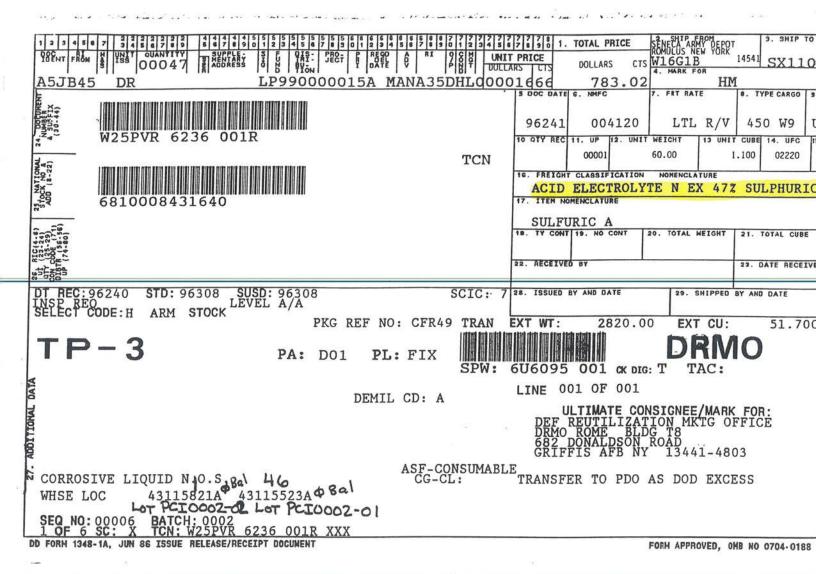
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WHSE LOC/EXP 43126426A/9711		IMIV	OLDIN TO THO	110 DOD EAC	,1100
SEQ NO: 00293 BATCH: 0008 6 OF 6 SC: X TCN: W25PVR 5278 Z0					
DD FORM 1348-1A, JUN 86 ISSUE RELEASE/RECEIPT DOCU)88 XXX IENT		As Lasty	FORM APPROVED	OMP NO 0704-0100
	00000	Tama	Me last	TONE APPROVED,	OUR NO 0108-0188







Here are the figures for the DS2, these are on record figures:

4230-01-133-4124 - 108607 - A Condition 16074 - K Condition

Unit of Issue is Each

1.32+

6850-00-753-4827 - 37146 - A Condition

151813 - K Condition

Unit of Issue is Can (188, 959)(1.3) = 61, 411601

6850-00-753-4870 - 237869 - A Condition >

67441 - K Condition

Unit of Issue is Can (305, 310.)(5) = 1,526,5506

6850-01-136-8888 - 67362 - A Condition 7

16277 - K Condition

If you need any more info call me at 41-310/331.

Moe

Unit of Issue is Each (83, 639)(4)

3, 785 = 309,3646a1

(1,897, 325,Ga

DS-2 Sodium Hydroxide - Methyl Cellosolve Diethyenetriamine

NEN 6850-00-753.4827 = 1.3 Qt @ 204025 = 265 232.5Qt;4= 66,308 | Gel

NSN 6850-00-753.4820 = 5 Gel @ 308866 = 1,544,330.0 Gel

6850
NSN 6850-00-136-8888 = 14 Liter@ 80047 = 1,120,658 Lit. i 3.785= 296,078.7 Gel

1,906,716.86el

SPEC Giru = 97.5% (.915) (8.3) (1, 906, 716.8) = 15, 430, 105.70 165

109-86-4 2methoxyethanol = 28% = (.28)(15, 430, 105.7) = 4,320, 429. 6165 1310-73-2 Sodium Hydroxide = 2% = (.02)(15,430,105.7) = 308,602.1165

Ferric Chloride 7705-08-0 NSN 6810-00-664-0283 (60) (100) = 6000 165

Insecticade - NSN 6840-00- 153-5038 - Diazmon Dust 2% (318) (2516s) = (795016s) (.02) = 159165

EHS

Chlorine 7782-50-5 Visual Inspection 2-3-98 8374 = 60150165 = 900165 2015165 = 150165 8827 = 016865 = 0165 8334 = 20150 = 300165 8341 = 20150 = 300165

B 353 = 1 @ 150 = 150 lbs

Gasoline 11.5% spec 6124,

B 120 S. End Storage - 12000Get attany one time

B 721 N. End Storage - No longer any Storage available (Tanks are gone)

(12,000)(.7715)(8.3) = 71,214.00

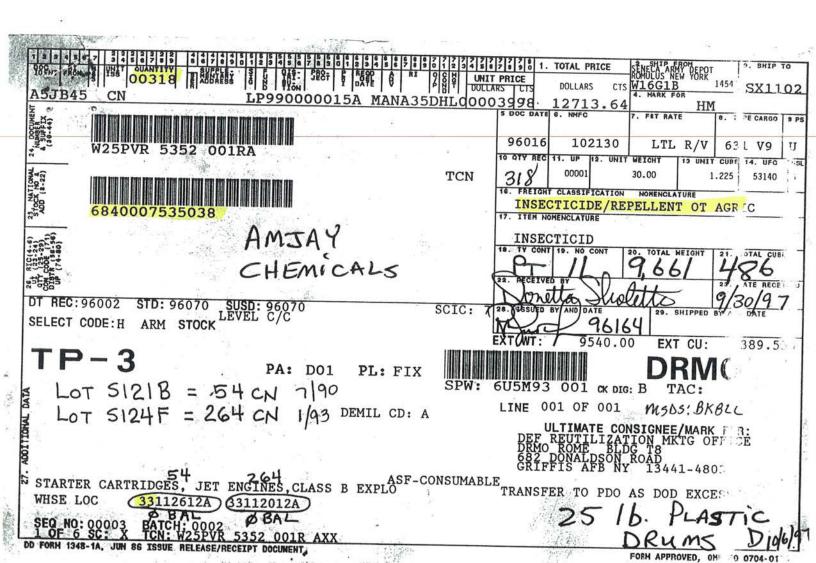
71-43-2 Benzine 2% 71,214. (202) = 1,424 165 108-88-3 Toluene 3% 71,214. (.03) = 2,136 165 1330-207 X/Lene 5% 91,214. (.05) = 3,560 165

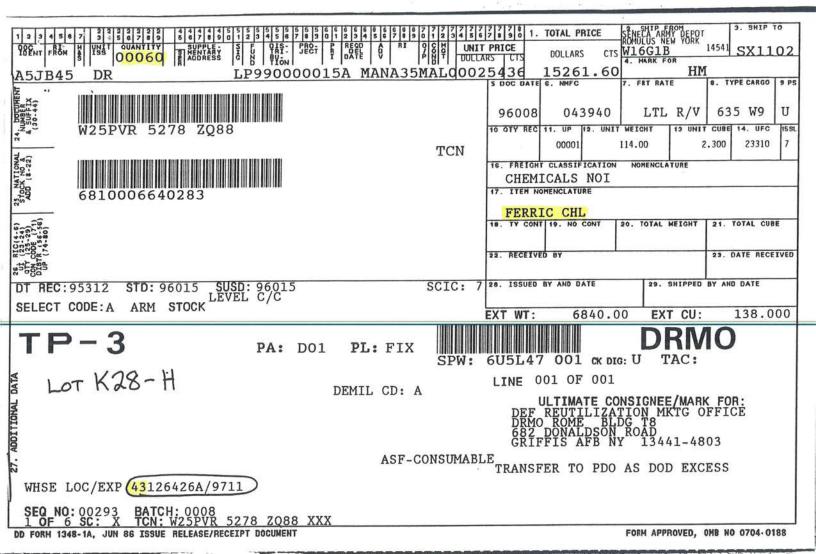
R-12 (Duhlerod, fluoromethene) 75-71-8

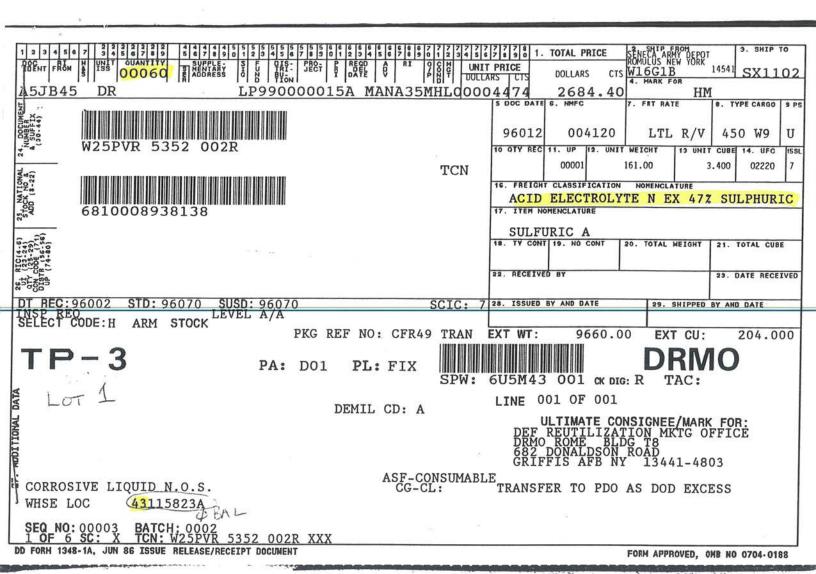
B 374 3@ 150 165 = 450 165

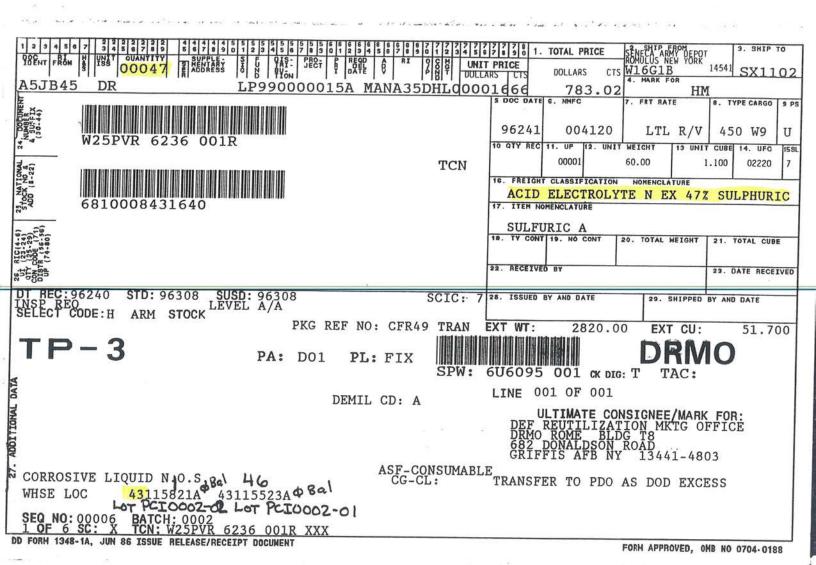
13@ 50 165 = 450 165

1100 165









GENERAL SUPPLY STOCK REMAINING ON RECORD

#LINES RIC 1 B14		STOCK NUMBER	NOMENCLATURE	CC	QUANTITY 122232
		4230011334124	DECONTAMINATING KIT		
2	B14	6850007534827 DECON AGENT (DS2) 1 1/3 QT CAN		А	204025
3	B14	6850007534870	DECON AGENT (DS2) 5 GL CAN	Α	308866
4	B14 6850011368888 DECON AGENT (DS2) 14 LITRE CAN		DECON AGENT (DS2) 14 LITRE CAN	А	80047
5	5 B14 7920011368892		DECON BRUSH	Α	15

REPLY TO ATTENTION OF

DEPARTMENT OF THE ARMY

SENECA ARMY DEPOT ACTIVITY 5786 STATE RTE 96 ROMULUS, NEW YORK 14541-5001



SIOSE-IE

29 June 1998

MEMORANDUM FOR Commander, U.S. Army Industrial Operations Command, ATTN: AMSIO-EQC (Lynn Wandrey), Rock Island, IL 61299-7190

SUBJECT: Submission of Calendar Year 1996 Toxic Release Inventory (TRI) Reports

- 1. Reference memorandum, AMSIO-EQC, IOC, 16 June 1998, subject as above.
- 2. Seneca Army Depot Activity (SEDA) is not required to fill out Form R for Toxic Releases. SEDA does not manufacture or process toxic chemicals on the installation, but is a storage depot slated for closure under BRAC in July 2001.
- 3. The point of contact for this action is Michael Stofka, DSN 489-1532.

DONALD C. OLSON

2. m. Wul

LTC, OD Commanding

File: Form R

SIOSE-IE

24 June, 1998

MEMORANDUM FOR, U.S. Army Industrial Operations Command, ATTN: AMSIO-EQC (Lynn Wandrey), Rock Island, IL 61299-7190

SUBJECT: Submission of Calendar Year 1996 Toxic Release Inventory (TRI) Reports

- 1. Reference memo, IOC, 16 June, 1998.
- 2. Seneca Army Depot Activity (SEDA) is not required to fill out Form R for Toxic Releases. SEDA does not manufacture or process toxic chemicals on the installation, but is a storage depot slated for closure under BRAC in July 2001.
- 3. The POC for this action is Michael Stofka, DSN 489-1532.

DONALD C. OLSON LTC, OD Commanding Author: olsond at ccremote Date: 6/18/98 12:46 PM

Priority: Normal

TO: sabsolom at ri3904s1

Subject: Submission of FY 97 Toxic Release Inventory Reports

Steve, we submitted this already?

LTC O

Forward Header

Subject: Submission of FY 97 Toxic Release Inventory Reports

Author: siose-co at ccremote Date: 6/18/98 8:47 AM Mike S Pls.

DEPARTMENT OF THE ARMY

HEADQUARTERS, U.S. ARMY INDUSTRIAL OPERATIONS COMMAND ROCK ISLAND, ILLINOIS 61299-6000

S: 1 July 1998

AMSIO-EQC (200(B))

16 June 1998

MEMORANDUM FOR ALL IOC INSTALLATIONS

SUBJECT: Submission of Calendar Year 1997 Toxic Release Inventory (TRI) Reports

- 1. The filing date for submitting 1997 TRI reports is 1 July 1998. The Form R, instructions, and guidance documents are available on the Internet. The address is http://www.epa.gov/opptintr/tri. If you do not have Internet access, you may call the Emergency Planning and Community Right-to-Know Act (EPCRA) hotline at (800) 535-0202 or the EPCRA Reporting Center AFR Technical Support at (703) 816-4434 to obtain a copy.
- 2. All IOC installations are required to submit TRI reports to the Headquarters. The report can be sent before or at the same time the report is sent to the U.S. Environmental Protection Agency, but it must reach us by the 1 July 1998 deadline.
- 3. For the Government-owned, Government-operated installations, one report is prepared and submitted. The report covers all Department of Defense (DoD) related work going on at your installation. The installation commander signs the report.
- 4. For Government-owned, contractor operated (GOCO) installations, two reports must be prepared. The first one is prepared and submitted by the operating contractor as a private company and it covers all their activities on the installation, including DoD and commercial work. This is signed by the plant manager or other contractor representative. The second report is prepared and submitted for the installation as a Federal facility. This report covers all contractor and tenant activities that are related to work being done for the DoD. Commercial work performed by the operating contractor and/or tenant activities is excluded from the Federal facility report. Tenant activities related to DoD work should also be included in threshold calculations. The installation commander signs the second report. The operating contractor should ensure tenant activities that meet or exceed thresholds in their operations

submit their own reports and provide the data to be included in the Federal facility report. If a tenant is not required to report on its own, the installation should attempt to get the necessary data from the tenant.

- 5. Federal facility reports can be sent to us in one of two ways. First, a disk can be prepared and sent through the mail. These should be mailed to: Commander, U.S. Army Industrial Operations Command, ATTN: AMSIO-EQC (Ms. Lynn Wandrey), Rock Island, IL 61299-6000. Second, the files can be zipped and sent via electronic mail. The address is wandreyl@ioc.army.mil. The DoD requires that the electronic reporting software be used and that reports are submitted electronically. Please do not send hard copies of your Form R. If you have problems with the software, call the technical support at the number in paragraph 1.
- 6. Please include a copy of the cover letter with your submission. For GOCO installations, if there are large differences between the contractor and Federal facility reports, please make a note of that in your cover letter.
- 7. Please double check the following areas of your report before submitting it to us:
 - a. Is the facility correctly identified?
 - b. Is the report signed?
- c. Are the amounts reported in sections 5 and 6 correctly translated to section 8? Information on reporting amounts in section 8 is found in the guidance.
- d. Did you include any source reduction activities? Please include a short narrative of any P2 efforts that either have or will have an impact on your TRI reporting. These will be used as a basis for "good news" stories that will be included in the DoD data release next spring.

Guidance for completing Federal facility reports can be found in Appendix A of the instructions.

- 8. If your facility fell below threshold requirements, please send a memorandum explaining why you are no longer required to report. If it is a result of pollution prevention efforts, include a short description of the project(s). If your facility has not reported in past years and is not required to report this year, please send a memorandum confirming that you will not be reporting. In either case, ensure that proper documentation is maintained to show that threshold calculations were performed and all appropriate activities were taken into account. Except for the manufacture of ordnance, DoD policy has deferred reporting ordnance activities through calendar year 1998.
- 9. The POC is Ms. Lynn Wandrey, AMSIO-EQC, DSN 793-2288, fax DSN 793-1457, E-mail wandreyl@ioc.army.mil.

FOR THE COMMANDER:

//original signed//
ROBERT J. RADKIEWICZ
Deputy Chief of Staff for
 Environmental Management

Author: siose-co at ri3503m2 Date: 9/29/97 8:42 AM

Priority: Normal

TO: sabsolom at ri3904s1, windlem at ri3503m2

Subject: EPCRA Section 313 Inspection

DEPARTMENT OF THE ARMY HEADQUARTERS, U.S. ARMY INDUSTRIAL OPERATIONS COMMAND ROCK ISLAND, IL 61299-6000

AMSIO-EQC (200(B))

25 September 1997

MEMORANDUM FOR IOC INSTALLATIONS

SUBJECT: Emergency Planning and Community Right-to-Know Act (EPCRA) Section 313 Inspection

- 1. The attached memorandum is a report of an inspection conducted by the U.S. Environmental Protection Agency (EPA) at Fort Lewis to review their compliance with EPCRA and Executive Order 12856.
- 2. Although Federal facilities cannot be fined by the EPA for noncompliance, the EPA can conduct extensive inspections. Please review the attached memorandum and ensure that you have the necessary information and documentation available. The EPA will be conducting more inspections of Federal facilities in the future, even if your installation has never been required to submit a report. It is possible that they will target installations that reported in past years, but didn't report in following years.
- 3. The POC is Ms. Lynn Wandrey, AMSIO-EQC, DSN 793-2288, electronic mail lwandrey@ria-emh2.army.mil.

FOR THE COMMANDER:

Attach

//original signed// ROBERT J. RADKIEWICZ Deputy Chief of Staff for Environmental Management

Mike Stofka - Please review and come seeme. Thouses.

Sung.

AFZH-PWQ (200-1)

MEMORANDUM FOR RECORD

SUBJECT: EPCRA SECTION 313 INSPECTION 18-20 August 1997

- 1. Executive Order (EO) 12856 "Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements", dated 03 August 1993, requires federal facilities to comply with EPCRA. AR 710-2 and FL Reg 200-1, Chapter 7 and Appendix F establish the mechanism for data collection to support the requirements of the EO. Fort Lewis established a reporting mechanism to collect data through quarterly Hazardous Material (HM) Inventories.
- 2. Fort Lewis, WA received a Notice of Inspection EPCRA Section 313 on 21 July 1997. This notification was for a planned inspection by the Environmental Protection Agency (EPA) encompassing the entire facility identified as "Fort Lewis, WA including Yakima Training Center. This inspection was pursuant to Executive Order #12856, which defines the obligation of federal facilities to abide by the same Emergency Planning and Community Right to Know Act (EPCRA) laws in effect for the private sector. (Enclosure 1).
- 3. The Notice of Inspection letter requested that information be submitted to the EPA for review two weeks prior to the inspection date of 18-20 August. The available requested information, documentation, and reports were transmitted 5 August 1997 (Enclosure 2). A team of personnel worked to pull all of the required information together to meet the required submission date. Personnel involved in preparing the documentation for transmittal were: Richard Singler, David Hodgeboom, Marlyn Peavler, Traci Minnard, Karen Godsey, Ray Alonzo, Belinda McCarter, Ken Smith and Cynthia Trout. Information not transmitted 5 August 1997 was available during the scheduled inspection. Acknowledgement of receipt of requested data is attached. (Enclosure 3).
- 4. I notified the Public Works Deputy Director, Forces Command (FORSCOM) EPCRA Program Manager and Army Environmental Center EPCRA Program Manager regarding the upcoming inspection. I requested guidance on what data to provide and requested on-site support to address DOD hospital and ammunition exemptions.
- 5. The EPA EPCRA Section 313 Inspection Team arrived at 0800 18 August. The In Brief was held at building 1210. Personnel Present:

EPCRA Inspection Team: David Somers, EPA, Compliance Inspector (18-20 Aug)
Christina Colt, EPA, TRI Program Manager (18-20 Aug)
Philip Wong, EPA, Chief Compliance Inspection Branch (18-20 Aug)
John Ridgeway, WADOE, EPCRA (18-19 Aug)
Jack Bohler EPA RCRA Compliance Inspector (19-20 Aug)

Fort Lewis Personnel: Phil Crawford, PW, Acting Environmental Compliance Branch Chief Cynthia K. Trout, PW, EPCRA Program Manager Richard Singler, ANTEON, EPCRA Support Beverly Cross, DOL, Supply (18 Aug)

FORSCOM: Mitch Cohen (18-19 Aug)

- 6. A presentation of credentials, introductions, and exchange of business cards was done. EPA provided a list of specific areas that would be discussed or visited during the inspection (Enclosure 4). The EPA provided an overview of the EPCRA TRI Reporting requirements.
- After an overview of the data submitted prior to the inspection was done; data not submitted 5

August was handed over. EPA reviewed data submitted 5 August. EPA asked for and received additional data throughout the inspection.

- 8. The EPA reviewed the following while on site:
- a. Administrative review of data (Wanted to see a paper trail from initial order of item containing TRI chemicals until it is used, wasted, or residue produced. We directed their efforts to ht HM inventory, our mechanism for collecting reportable data as established in FL Reg 200-1)
- b. Review of Threshold Calculations (How we calculated threshold and applied exemptions)
- c. Review of Release Calculations (How we determined releases as reported on the Form R)
- d. Site Visits
- 9. Administrative Review of the data. EPA requested a listing of all vendors who supply Fort Lewis with Hazardous Materials and the types of Hazardous Materials they supply. Bev Cross, DOL, explained the various avenues of hazardous material procurement. A listing of vendors could be supplied but it would be time consuming to pull all information together and a large document would be the result. I explained that the mechanism we used to capture all hazardous material stored and used on Fort Lewis was through a quarterly reporting of hazardous material inventories. This mechanism was established through AR710-2, AR200-1 and implemented with FL Reg 200-1. Information was provided on hazardous material inventory statistics. Average quarterly reporting was 40%, with 70% reporting at least one time during CY96. EPA wanted information regarding how contractors working on Fort Lewis reported. We told them it was written in the contract specs. Prior to the inspection we were required to provide a list of

contractors working on post. They requested a listing of contractors reporting in EPCRA. Currently 4 contractors are reporting. From data provided to the EPA, there are 44 on-site contractors at MAMC and 144 contractors (COE and DOC) on-site at Fort Lewis.

- 10. EPA requested a listing of all processes and the quantities of TRI chemicals used in each process. I explained that we did not track our data in that manner. An EPCRA data base had been developed that we used to track all TRI chemicals used at Fort Lewis. I could have a query built and the data pulled out if they wanted, but the process information was not at the level of detail requested. I provided a copy of the EPCRA Database relationships so that they could see the data elements being collected and tracked. Ray Alonzo and Karen Godsey demonstrated how the system worked and showed how a TRI chemical was linked to an MSDS. We were also able to show all locations where that chemical was reported as being used. We showed the EPA the MSDS files we maintain and discussed our tracking number and the relationship to the HM inventory.
- 11. Threshold Determination: EPA requested a listing of TRI Chemicals used and amounts used at Fort Lewis. Listing Provided. This listing identified TRI Chemicals that exceeded thresholds prior to any exemptions. Verified that this data was based on the average 40% reporting. I explained that we extrapolated the data to show what the usage volumes would be for a year based on the data reported. I stressed that we applied the Department of Defense exemptions and supplied documentation on how exemptions were applied. (Enclosure 5). I verified that the Hospital Exemption was applied and that inventories for the clinics, labs, and photographic operations were not reported. Questions were raised regarding ammunition and TRI chemicals found in munitions. Mitch Cohen addressed these DOD exemptions and stressed that DOD would provide reporting guidance when facilities started reporting munitions.
- 12. Emissions Determinations: EPA reviewed documentation showing how releases to the environment were calculated. Copies of files were supplied to EPA for further review.
- 13. Sites Visited:
- ? MAMC:
- A. PHOTOGRAPHIC OPERATIONS: EPA was interested in areas where photographic chemicals were used. The EPA requested the following be sent: MSDSs for chemicals used, along with purchase records, and usage records.
- b. SILVER RECOVERY PROCESS: EPA requested an overview of the process. The EPA

requested records showing where all the used photographic waste came from and in what volumes. They also requested documentation showing treatment and testing for silver recovery (concentration of silver in fluids being used for silver recover and concentration of silver on the silver recovery filters).

C. HISTOLOGY LABORATORY (non-research lab): EPA requested to see a laboratory where

- C. HISTOLOGY LABORATORY (non-research lab): EPA requested to see a laboratory where medical solvents were used. The EPA requested documentation of medical solvent usage, volumes purchased, used, and recycled. They also were interested in Formaldehyde usage and treatment.
- ? ASP: EPA Inspector was trying to get information regarding ammunition usage as well as chemical constituents. The ASP Chief, Tom Navarous, explained that they could provide records of what was issued, but not where the ammunitions were used. He explained that the munitions could be used off Fort Lewis at other military installations. He also explained that not all visiting troops draw ammunition from the ASP. It was also noted that Foreign Military Train at Fort Lewis, as well as local, state and federal entities. Their ammunition is also not drawn from the ASP. Range control could provide who used the ranges. In general, it was apparent that collection of this data for future reporting would be an interesting exercise. We need to get controls in place to get the actual usage data. It appears to be available in some form between several organizations. EPA was looking for some estimate of number of bullets fired. The following estimates were provided for their estimation: Assume 450-bullets/s

oldier/yr. * Number of soldiers on the installation/yr. = # bullets fired. Assume 30 grains of lead/bullet. 7000 grains/pound.

450 bullets/soldier/year * 20,000 soldiers * 30 grains lead/bullet * pounds/ 7000 grains = 38571 # lead

- ? DOL: EPA Inspectors wanted to look at our Industrial Facility. We visited various process areas within the DOL: Painting operations, Paint Booths, Paint Storage, Paint Gun cleaning, Solvent Recycling. We also toured the Engine Repair Line and the Ammunition Parkerizing Process. During this portion of the Site Inspections, the lead inspector asked where all our large chemical vats were located. We said we removed the vapor degreasers in 1992 and replaced them with aqueous parts washers. The only open tanks currently in operation at the DOL were in the Parkerizing Process (Phosphoric acid and chromic acid). At this point, I believe the Inspectors were starting to realize that we just don't use large quantities of TRI chemicals.
- ? Military Battalion S4 Shop: Administrative Review only. The EPA wanted to see the paper trail from initial order of item containing the TRI chemical until is used and wasted or residue produced. The EPA also did a data quality check on what was reported in a previous HM Inventory and what was currently in use. The EPA found discrepancies in the data (between reported inventory and currently used TRI chemicals).
- ? YTC: Inspection of YTC was handled as a separate facility from Fort Lewis. The EPA went through the same administrative review. We also went out on site visits. The EPA requested munitions information. I repeated the Information Mitch Cohen, FORSCOM had been saying throughout the inspection
- 14. The following are the basic findings as a result of the EPA TRI Inspection:
- ? Flow of Paperwork not complete
- ? Data Collection Problems
- ? Incomplete HM Inventories both from contractors, garrison, and military activities, includes, but is not limited to the following:
- ? Not turning in any inventory
- ? Not turning in a quarterly inventory
- ? Quantities on inventory do not correlate with quantities in use
- ? Products on inventory do not agree with products on hand
- ? No central tracking of HM (don't seem to be able to show HM request, order, or receipt
- ? Data Reliability
- ? Because of the incomplete inventory data, EPA questioned the reliability of the data that we

used to generate the TRI reports. Are we under reporting?

- ? Data Discrepancies
- ? Because of incomplete data reporting 1994 to present, there appears to be large gaps in the data. EPA is concerned about those discrepancies and has required us to provide documentation to justify these discrepancies. In other words, we get to go back and re evaluate the data.
- 15. The following is information we owe EPA:

A. MAMC

- ? MSDSs for developers and fixers
- ? Amount of silver recovered
- ? Xylene, Formaldehyde, and p-acetic acid requested and received
- ? Xylene, formaldehyde and p-acetic acid usage
- ? Recycling of xylene and alcohol yearly amount from 1996 or extrapolate from data available in 1997
- ? Formaldehyde treated.
- B. The 8-11 chemicals exempted in 1996, show amounts and reason for exemption
- C. The large amounts of chemicals used in 1995 but low usage in 1996, i.e. lead, antimony arsenic. Discuss not just the batteries but include the other chemicals that showed equivalent swings.
- Summary of EPCRA INSPECTION provided by Richard Singler, ANTEON

Major areas from the EPA Region 10 TRI inspection of Fort Lewis and Yakima Training Center are:

- 1. EPA wants to see a paper trail from initial order of item containing TRI chemical until it is use and waste or residue produced. This includes:
 - a. "Purchase Requests" or military equivalent.
 - b. Material receipt.
 - c. Inventory records.
 - Records showing the process consuming the TRI material.
 - e. If a process produces or manufactures a TRI chemical, the team wants to see records.

Example: If a welding rod contains Zinc and the welding process produced Zinc Oxide fumes, the inspection team wanted to see documentation on the welding. How many pounds of rods are used, what are the TRI chemicals in the rods, what TRI chemicals are manufactured? The team considered Zinc Oxide fumes "manufactured" in the welding process.

According to the inspection team, EPA fined a stainless steel fabricator for not properly tracking and reporting the waste stainless steel turnings that were recycled as scrape metal. The teams rational is that since stainless steel contains traces of TRI metals (Vanadium, Chromium, etc.) and the weight of the TRI metals in the steel exceeded the threshold level, therefor release calculations must be performed.

REPEATEDLY THE TEAM ASKED FOR PURCHASE/ORDER RECORDS, MATERIAL RECEIPT RECORDS, MATERIAL INVENTORY RECORDS AND USE RECORDS FOR PRODUCTS CONTAINING TRI CHEMICALS OR MANUFACTURING TRI CHEMICALS. DURING THE OUT BRIEF THE TEAM SAID THAT FORT LEWIS HAD THE RECORDS SHOWING PROCESS USE BUT NOT THE SUPPORTING PURCHASE, RECEIPT OR INVENTORY RECORDS. THE TEAM STATED THAT FORT LEWIS HANDLED THE TRI DATA IT RECEIVED WELL BUT THAT THE "CHAIN WAS BROKEN" FOR ALL THE NECESSARY DATA TO REACH THE PERSONNEL PREPARING THE TRI.

2. After FORSCOM representative presented the DOD guidance to military units, the inspection team did not push the munition question. However, the inspection team said that EPA considered small arms brass cartridge cases to be TRI containing residue of a use of TRI containing item, e.g. small arms ammunition. Once EPA settles the small arms issue with DOD, this inspection team expects to see if amounts are above threshold level, the annual TRI report containing release calculations for small arms ammunition. This includes the lead and copper in the bullets, the copper and zinc in the brass cartridge

as well as the TRI chemicals in the powder and primer. This includes any new TRI compounds that the burning powder creates.

The team expects the same information for all munitions with TRI chemicals above the threshold level.

The team made the point of saying that some Air Force installations, Department of Energy Security Forces and the Bureau of Alcohol Tobacco and Firearms were reporting small arms usage.

- 3. The inspection team repeatedly commented that the Fort Lewis physical size, acres and number of buildings, is large but, with the exception of munitions, the TRI content appears very small.
- 4. The team disagreed with DOD interpretation of the hospital exemption. The team considered as exempt only those chemicals/medications that a patient directly consumes. Chemicals used in a laboratory or X-ray, etc are not exempt.

CYNTHIA K. TROUT Environmental Engineer, ENRD

Cindy Trout

Page

Cindy Trout

Page



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

January 22, 1998

OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES

Dear RoL Subscribers:

The 16th update of the U.S. EPA Register of Lists has been completed, and we have set up a trial web page from which you can download the data.

Please point your browser to: http://www.epa.gov/rol/

You will find instructions there on how to download the revised data files and perform the update. If you should have any difficulty, please give Jon Barney a call at 312-886-6102, or via email at BARNEY.JONATHAN@EPAMAIL.EPA.GOV.

Since this is our first attempt at this kind of distribution of a RoL update, Jonathan and I would appreciate any feedback, positive or negative, you may have on how it works.

Also, the update is still available on diskette, but is only being mailed out on an as need basis. If you encounter problems downloading the update, please do not hesitate to request a diskette copy.

Sincerely,

Linda Goodman

RoL, Systems Manager

IAB/IMD 7407 (202) 260-1521

Water Plants

- 1) Chlorine Northridge Exempt Treatment in H, a Treatment (7782-50-5)

 Rlants
- 2) Fluorescent Red Dye Tablet Formulabs, Inc. attented
 (Basic Violet) 81-88-9 (1572) Dozentub/year
- 3) Ethyl Alcohol, Denatured Fisher Scientific (Methyl Isobutyl Ketone) 108-10-1 (0,9%) deminimus Except Less than 1% by wt,
- 4) Nitric Acid Fisher Scientific No longer Used (Hydrogen nitrate) 7697-37-2 (70%) No longer Used
- 5) Isopropyl Alcohol, ACS Fisher Scientific No Longer (Isopropyl Alcohol) 67-63-0 (100%) useder
- (2) (365)= 73002-45 lbs
- 7) Sulfure Acid Fisher Scientific No Longer Wood (Sulfur Acid) 7664-93-9 (90.5-98.0%)

Water Plants

- 8) Sulfure Acid Solutions 0.05 4.9% Fisher Scientific (Sulfure Acid) 7664-93-9 (0.05-4.9%) Nolonger ased
- 9) Sulfure Acid Solutions Fisher Scientific Wolonger (Sulfure Acid) 7664-93-9 (29.6-70.3%) used

08-11-1988

Page 1

NORTHRIDGE TOX CENTER FACTSHEET MSDS for CHLORINE

1 - Site Specific Information

* * NOT Implemented for Specified Chemical * *

2 - General Information

DOT SHIPPING NAME CHLORINE (RQ-10/4.54)

CHEMICAL NAME CHLORINE

DOT/UN ID NUMBER 1017

NFPA CODE 2 - 4 - 0

DOT HAZARD CLASS NONFLAMMABLE GAS

EMERGENCY PHONE NUMBER (800) 982-9000 NOTICE

The information in this chemical emergency fact sheet was prepared by the Northridge Tox Center, Northridge Hospital Medical Center, Northridge, California from sources and experiences deemed to be reliable and accurate. The reader is cautioned that information in published sources cannot substitute for the judgement of knowledgeable, responsible persons at the scene. Be aware that the information published herein does not address hazards which arise when two or more substances are mixed.

DO NOT MODIFY ANY OF THE DATA PROVIDED ON THIS FACT SHEET. Report any suggestions for changes to the Northridge Tox Center.

3 - Physical Characteristics

BOILING POINT -29.2 F

SPECIFIC GRAVITY NA

VAPOR DENSITY 1.4

SOLUBILITY IN WATER

3 - Physical Characteristics (continued)

C

APPEARANCE AND OTHER CHARACTERISTICS

GREENISH YELLOW GAS, WITH PUNGENT ODOR. VAPOR IS HEAVIER THAN AIR AND MATRAVEL ALONG THE GROUND. MIXTURES OF HYDROGEN, ACETYLENE, AND AMMONIA AR EXPLOSIVE AND MAY IGNITE EVEN BY THE EFFECT OF INTENSE SUNLIGHT. VIOLENTL REACTS WITH MAY ORGANIC COMPOUNDS. CORROSIVE TO EYES, SKIN, AND RESPIRATORY.

4 - Fire and Explosion Hazards

FLASH POINT NA F

AUTO IGNITION

NA F

FIRE AND EXPLOSION HAZARDS - DOT GUIDE TEXT

MAY IGNITE OTHER COMBUSTIBLE MATERIALS (WOOD, PAPER, OIL, ETC.). MIXTURE WITH FUELS MAY EXPLODE. CONTAINER MAY EXPLODE IN HEAT OF FIRE. VAPOR EXPLOSION AND POISON HAZARD INDOORS, OUTDOORS, OR IN SEWERS.

5 - Fire and Explosion Emergency Procedures

FIRE AND EXPLOSION EMERGENCY PROCEDURES - DOT GUIDE TEXT SMALL FIRES: DRY CHEMICAL OR CO2.

LARGE FIRES : WATER SPRAY, FOG, OR FOAM.

MOVE CONTAINER FROM FIRE AREA IF YOU CAN DO IT WITHOUT RISK. STAY AWAY FROM ENDS OF TANKS. COOL CONTAINERS THAT ARE EXPOSED TO FLAMES WITH WATER FROM THE SIDE UNTIL WELL AFTER FIRE IS OUT. FOR MASSIVE FIRE IN CARGO AREA, USE UNMANNED HOSE HOLDER OR MONITOR NOZZLES. IF THIS IS IMPOSSIBLE, WITHDRAW FROM AREA AND LET FIRE BURN.

6 - Health Hazard Data

HEALTH HAZARDS - DOT GUIDE TEXT

POISONOUS. MAY BE FATAL IF INHALED. CONTACT MAY CAUSE BURNS TO SKIN AND EYES. CONTACT WITH LIQUID MAY CAUSE FROSTBITE. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION.

7 - Spill or Leak Procedures

SPILL OR LEAK PROCEDURES - DOT GUIDE TEXT

KEEP COMBUSTIBLES (WOOD, PAPER, OIL, ETC.) AWAY FROM SPILLED MATERIAL. STOP LEAK IF YOU CAN DO IT WITHOUT RISK. USE WATER SPRAY TO REDUCE VAPORS BUT DO NOT PUT WATER ON LEAK OR SPILL AREA. ISOLATE AREA UNTIL GAS HAS DISPERSED.

8 - First Aid Procedures

FIRST AID PROCEDURES - DOT GUIDE TEXT

MOVE VICTIM TO FRESH AIR. CALL EMERGENCY MEDICAL CARE. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. IN CASE OF CONTACT WITH MATERIAL, IMMEDIATELY FLUSH SKIN OR EYES WITH RUNNING WATER FOR AT LEAST 15 MINUTES. REMOVE AND ISOLATE CONTAMINATED CLOTHING AND SHOES AT THE SITE. KEEP VICTIM QUIET AND MAINTAIN NORMAL BODY TEMPERATURE. EFFECTS MAY BE DELAYED. KEEP VICTIM UNDER OBSERVATION.

9 - Emergency Action

EMERGENCY ACTIONS - DOT GUIDE TEXT

KEEP UNNECESSARY PEOPLE AWAY. ISOLATE HAZARD AREA AND DENY ENTRY. STAY UPWIND. KEEP OUT OF LOW AREAS. VENTILATE CLOSED SPACES BEFORE ENTERING THEM. WEAR POSITIVE PRESSURE BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING. EVACUATE AREA ENDANGERED BY GAS. IF WATER POLLUTION OCCURS, NOTIFY APPROPRIATE AUTHORITIES.

MATERIAL SAFETY DATA SHEET

REVISION DATE: 10/10/88 ITEM NO. FLUORESCENT RED DYE TABLET PAGE 1 FCRMULABS, INC. 529 WEST FOURTH AVENUE ESCONDIDO, CA 92025 BUSINESS/EMERGENCY PHONE: (619) 741-2345 PREPARED BY: A. CARBONNEAU -----I. PRODUCT IDENTIFICATION-----TRADE NAME: FLUORESCENT RED DYE TABLET CHEMICAL FAMILY: RHODAMINE B . FORMULA: PROPRIETARY -----II. HAZARDOUS INGREDIENTS-----. EXPOSURE LIMITS IN AIR CAS ACGIH OSHA CHEMICAL NAMES NOS. % (TLV) (PEL) BASIC VIOLET: 10 81-88-9 15.0 NOT ESTABLISHED TALC 14807-96-6 5.0 2 MG/M3 20 MPCF (RESPIRABLE DUST) NON-HAZARDOUS INGREDIENTS 80.0 NOT ON FEDERAL HAZARD COMMUNICATION SUBSTANCE LIST. *TALC CONTAINS SILICA AND FIBROUS TREMOLITE. SILICA HAS A TLV OF 0.1 MG RESPIRAL DUST (ACGIH) AN 0.05 MG/M3 (RECOMMENDED NIOSH). FIERCUS TREMCLIS HAS A TLV OF 2 FIBERS/CC AIR, TWA (OSHA) AND 0.1 FIBERS/CC AIR, ACTION LEVEL (CA ONLY). BOILING POINT, DEG F: N/A SPECIFIC GRAVITY (WATER=1): N/A MELTING POINT, DEG F: N/A EVAPORATION RATE (BUTYL ACETATE=1): N/A VAFOR PRESSURE, (MMHG): N/A WATER SOLUBILITY: APPRECIAB VAFOR DENSITY (AIR=1): N/A AFFEARANCE AND COOR: SOLID RED TABLET; NO AFFRECIABLE ODOR -----IV. FIRE AND EXPLOSION-----FLASH POINT, DEG. F: NONE FLAMMABLE LIMITS IN AIR, METHOD USED: N/A LOWER: N/A UPPER: N/A AUTOIGNITION TEMPERATURE, F: N/A FIRE EXTINGUISHING MATERIALS: WATER SPRAY X FOAM X CARBON DIOXIDE X DRY CHEMICAL X OTHER SPECIAL FIREFIGHTING PROCEDURES: USE SELF-CONTAINED BREATHING APPARATUS AN PROTECTIVE CLOTHING. UNUSUAL FIRE AND EMPLOSION HADARDS: DUST MAY BE EMPLOSIVE IF MIMED WITH AIR IN CRITICAL PROPORTIONS AND IN THE PRESENCE OF A SOURCE OF IGNITION. SWMFTOMS OF OVEREMPOSURE FOR EACH POTEMPTIAL ROUTE OF EMPOSURE. INHALED: OVERENFOSURE TO DUSTS MAY CAUSE COUGHING, WHEEDING AND POSSIBLE PULMONARY CONDITIONS. CONTACT WITH SKIN OR EYES: MAY CAUSE IRRITATION. WILL TEMPORARILY STAIN SHIM. ABSORBED THROUGH SKIN: N'A DEALLOWED: NO HARMENL EFFECTS EXPECTED FROM NORMAL HAMDLING. TRINE . Y NAVE RED COLOR UNTIL DVE IS WASHED THROUGH SYSTEM.

MATERIAL SAFETY DATA SHEET
REVISION DATE: 10/10/88 ITEM NO. FLUORESCENT RED DYE TABLET PAGE 2
HEALTH EFFECTS OR RISKS FROM EXPOSURE.
ACUTE: DIRECT CONTACT MAY PRODUCE SERIOUS EYE IRRITATION.
CHRONIC: THE TOXICOLOGICAL PROPERTIES OF THIS MATERIAL HAVE NOT BEEN FUI INVESTIGATED. BASIC VIOLET 10 HAS BEEN SHOWN TO PRODUCE CHROMOSOME DAMPIN LABORATORY TESTS. IMPURITIES COMMONLY ASSOCIATED WITH THIS DYE, ALTHONOT THE DYE ITSELF, HAVE BEEN REPORTED TO BE MUTAGENIC IN THE AMES TEST. BASIG VIOLET 10 CAUSED CANCER IN LIFETIME LABORATORY FEEDING STUDIES. LONG TERM OVEREXPOSURE TO SILICA DUST CAN CAUSE SILICOSIS. HIGH LEVELS OF FIBROUS TREMOLITE PARTICLES MAY CAUSE FIBROSIS OF THE LUNGS.
FIRST AID: ÉMERGENCY PROCEDURES
EYE CONTACT: FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. G MEDICAL ATTENTION.
SKIN CONTACT: WASH SKIN THOROUGHLY WITH SOAP AND WATER.
INHALED: NO HARMFUL EFFECTS EXPECTED. GET FRESH AIR.
SWALLOWED: DRINK PLENTY OF WATER. GET MEDICAL ATTENTION IF LARGE QUANTITY WERE INGESTED OR IF NAUSEA OCCURS.
SUSPECTED CANCER AGENT?
NC:THIS PRODUCT'S INGREDIENTS ARE NOT FOUND IN THE LISTS BELOW.
YES: FEDERAL CSHA_X NTP IARC CAL/OSHA
NOTE: WHEN USED AS RECOMMENDED, THIS PRODUCT IS CONSIDERED NON-HAZARDOUS
STABILITY: STABLE: X UNSTABLE UNSTABLE UNSTABLE MATERIALS TO AVOID: STRONG OXIDIDING AGENTS
HADARDOUS DECOMPOSITION FRODUCTS (INCLUDING COMBUSTION PRODUCTS): BURNING MAY FRODUCE CARBON MONOMIDE, CARBON DIOXIDE, CHIDES OF NITROGEN, AMMONIA AND OR HYDROGEN CHLORIDE GAS.

MACARDOUS POLYMERICATION: MAY COOUR___ WILL NOT COOUR_E

SOMPLIES TO AVOID: N/A

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	MATERIAL SAFETY DATA SHEET
	. MATERIAL SAFETI DATA SHEET
	REVISION DATE: 10/10/88 ITEM NO. RED DYE TABLET PAGE: 3
	SPILL RESPONSE PROCEDURES AND EMPLOYEE PROTECTION MEASURES: SWEEP UP AND PLACE IN WASTE DISPOSAL CONTAINER. FLUSH AREA WITH WATER.
	DISPOSAL METHODS: INCINERATE OR REMOVE TO SUITABLE SOLID DISPOSAL.SITE.
	NOTE: DISPOSE OF ALL WASTES IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.
	VENTILATION AND ENGINEERING CONTROLS: NOT NECESSARY UNDER NORMAL CONDITIONS
	RESPIRATORY PROTECTION: USE DUST MASK IF DUSTY CONDITIONS EXIST.
,	EYE PROTECTION: GOGGLES OR SAFETY GLASSES WITH SIDE SHIELDS.
(GLOVES: RUBBER
	OTHER CLOTHING AND EQUIPMENT: PROTECTIVE CLOTHING WHERE SKIN CONTACT IS UNAVOIDABLE; EYEWASH.
Y	WORK PRACTICES, HYGIENIC PRACTICES: NO EATING OR SMOKING WHEN HANDLING PRODUCT.
C	OTHER HANDLING AND STORAGE REQUIREMENTS: STORE IN COOL, DRY FLACE
L	ABELING:

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Palater Plant

ETHYL ALCOHOL, DENATURED **ETHYL ALCOHOL, DENATURED** **ETHYL ALCOHOL, DENATURED**

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC CHEMICAL DIVISION 1 REAGENT LANE FAIR LAWN NJ 07410 (201) 796-7100

EMERGENCY CONTACTS GASTON L. PILLORI (201) 796-7100

DATE: 10/04/86 PO NBR: N/A ACCT: 906030-01 INDEX: 16-8627-40173 CAT NO: A407SK4

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SUBSTANCE IDENTIFICATION

SUBSTANCE: **ETHYL ALCOHOL, DENATURED**

TRADE NAMES/SYNONYMS: ETHANOL, DENATURED; GRAIN ALCOHOL, DENATURED; ETHYL HYDROXIDE, DENATURED; ETHYL HYDRATE, DENATURED; ALGRAIN, DENATURED; ANHYDROL, DENATURED; METHYL CARBINOL, DENATURED; COLOGNÉ SPIRITS, DENATURED; FERMENTATION ALCOHOL, DENATURED;

CHEMICAL FAMILY: HYDROXYL, ALIPHATIC

CERCLA RATINGS (SCALE C-3): HEALTH=1 FIRE=3 REACTIVITY=0 PERSISTENCE=0

COMPONENTS AND CONTAMINANTS

PERCENT: 88.0

COMPONENT: ETHYL ALCOHOL CAS# 64-17-5

PERCENT: 4.6

COMPONENT: METHYL ALCOHOL CAS# 67-56-1

PERCENT: 0.9

COMPONENT: ETHYL ACETATE

CAS# 141-78-6

-PERCENT: 0.9

COMPONENT: METHYL ISOBUTYL KETONE

CAS# 108-10-1

PERCENT: 0.9

COMPONENT: AVIATION GAS

CAS# NOT ASSIGNED

PERCENT: 4.6

COMPONENT: WATER

-EXPOSURE LIMITS: ETHYL ALCOHOL: 1000 PPM OSHA TWA 1000 PPM ACGIH TWA

METHYL ALCOHOL:

200 PPM OSHA TWA

200 PPM ACGIH TWA (SKIN); 250 PPM ACGIH STEL (SKIN)

200 PPM NIOSE RECOMMENDED TWA; 800 PPM NIOSH RECOMMENDED 15 MINUTE CEILING

PHYSICAL DATA

DESCRIPTION: CLEAR, COLORLESS LIQUID BOILING POINT: 172 F (78 C)

MELTING POINT: -172 F (-114 C) SPECIFIC GRAVITY: 0.8

VAPOR PRESSURE: 40 MMHG a 20 C EVAPORATION RATE: 1.4 (TTE)

SOLUBILITY IN WATER: COMPLETE SOLVENT SOLUBILITY: BENZENE, ETHER, ACETONE

ODOR THRESHOLD: 5-10 PPM VAPOR DENSITY: 1.6

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
DANGEROUS FIRE/NEGLIGIBLE EXPLOSION HAZARD WHEN EXPOSED TO HEAT OR FLAME.

VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL A CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK.

VAPOR-AIR MIXTURES ARE EXPLOSIVE ABOVE FLASH POINT.

FLASH POINT: 57 F (14 C) (CC) UPPER EXPLOSION LIMIT: 19%

LOWER EXPLOSION LIMIT: 4.3% AUTOIGNITION TEMP.: NON AVAILABLE

FLAMMABILITY CLASS(OSHA): IB

FIREFIGHTING MEDIA:
DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR ALCOHOL FOAM
(1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FOR LARGE FIRES, USE DRY CHEMICAL, CARDON DIOXIDE, OR ALCOHOL FOAM (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FIREFIGHTING:

EXTINGUISH ONLY IF FLOW CAN BE STOPPED. USE FLOODING AMOUNTS OF WATER AS FOG; SOLID STREAMS MAY BE INEFFECTIVE. COOL CONTAINERS WITH FLOODING AMOUNTS OF WATER FROM AS FAR A DISTANCE AS POSSIBLE. AVOID BREATHING VAPORS; KEEP—UPWIND (BUREAU OF EXPLOSIVES, EMERGENCY HANDLING OF HAZARDOUS MATERIALS IN SURFACE TRANSPORTATION, 1981).

TOXICITY

ETHYL ALCOHOL: 20 PPM EYE-HUMAN IRRITATION; 400
IRRITATION; 500 MG/24 HOUR SKIN-RABBIT SEVERE
IRRITATION; 100 MG/4 SECONDS EYE-RABBIT (RINSED) MODERATE IRRITATION.
2000 MG/KG ORAL-CHILD LDLO; 50 MG/KG ORAL-MAN
TDLO; 256 GM/KG/12 WEEKS ORAL-WOMAN TDLO; 20, 000 PPM/10 HOURS
INHALATION-RAT LC50; 7060 MG/KG ORAL-RAT LD50; 20 GM/KG SKIN-RABBIT LDLO;
7800 MG/KG ORAL-MUSE LD50; MUTAGENIC DATA (RTECS); REPRODUCTIVE EFFECTS
DATA (RTECS); TUMORGENIC DATA (RTECS); CARCINDGEN STATUS: NONE. AN EYE
AND RESPIRATORY IRRITANT AND CENTRAL NERVOUS SYSTEM DEPRESSANT.
METHY ALCOHOL: 5 PPM EYE-H!MAN IRRITATION; 500 MG/24 HOUR SKIN-RABBIT MODERATE
IRRITATION: 4C MG EYE-RABBIT MODERATE IRRITATION; 340 MG/KG ORAL-HUMAN LDLO;
13 GM/KG ORAL-MAN LDLO; 86,000 MG/M3 INHALATION-HUMAN TCLO; 5628 MG/KG
ORAL-RAT LD50; 64,000 PPM/4 HOURS INHALATION-RAT LC50; 20 GM/KG SKIN
RABBIT LD50; MUTAGENIC DATA (RTECS); REPRODUCTIVE EFFECTS DATA (RTECS);
CARCINOGENIC STATUS: NONE.

HEALTH EFFECTS AND FIRST AID

INHALATION:

CARCINOGEN/NARCOTIC/IRRITANT.

25,000 PPM METHYL ALCOHOL IS IMMEDIATELY DANGEROUS TO LIFE OR HEALTH.
ACUTE EXPOSURE- ETHYL ALOCOHL MAY CAUSE NASAL IRRITATION, COUGH, AND AT HIGH
LEVELS, A FEELING OF SUFFOCATION. CENTRAL NERVOUS SYSTEM DEPRESSION MAY

METHIL ALCOHOL MAY CAUSE SYMPTOMS OF INEBRIATION. WITHIN 12-18 HOURS, HEADACHE, ANOREXIA, WEAKNESS, FATIGUE, LEG CRAMPS, VERTIGO AND RESTLESS-NESS OCCUR, FOLLOWED BY NAUSEA, VOMITING, DIARRHEA, DIZZINESS, NARCOSIS, AND OTHER SIGNS OF CENTRAL NERVOUS SYSTEM DEPRESSION. SEVERE ABDOMINAL, BACK, AND LEG PAINS, MUSCULAR INCOORDINATION, SWEATING, TRACHEITIS, AND BRONCHITIS MAY ENSUE. APATHY OR DELERIUM MAY PROGRESS TO COMA. EXCITEMENT, MANIA, AND CONVULSIONS OCCUR RARELY. BLURRED OR DIMMED VISION HAS OCCURED, FOLLOWED BY TRANSIENT OR PERMANENT BLINDNESS, WITH OPTIC NEURITIS, EYE PAIN AND ATROPHY, CONCENTRIC VISUAL FIELDS, AND PHOTOPHOBIA. ACIDOSIS MAY RESULT IN RAPID, SHALLOW RESPIRATION, CYANOSIS, COMA, AND HYPOTENSION. MILD TACHYCARDIA, CARDIAC DEPRESSION, AND PERIPHERAL NEURITIS ARE POSSIBLE, AS WELL AS LIVER AND KIDNEY DAMAGE AND CEREBRAL AND PULMONARY EDEMA. DEATH IS POSSIBLE FORM RESPIRATORY FAILURE OR CIRCULATORY COLLAPSE. PROLONGED ASTHENIA AND PARITAL OR COMPLETE LOSS OF VISION IN 2-6 DAYS, AND PERMANENT RENAL DYSFUNCTION: MAY FOLLOW NON-FATAL INTOXICATION.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE TO ETHYL ALCOHOL MAY CAUSE RESPIRATORY IRRITATION, HEADACHE, AND SYMPTOMS OF CENTRAL NERVOUS SYSTEM DEPRESSION, SUCH AS LACK OF CONCENTRATION AND SOMNOLENCE.

METHYL ALCOLOL MAY CAUSE VISUAL IMPAIRMENTS AS DESCRIBED IN ACUTE INHALATION.

SEE ANIMAL MUTAGENIC, REPRODUCTIVE EFFECTS AND TUMORIGENIC DATA REFERENCES IN THE TOXICITY SECTION.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION.

SKIN CONTACT: IRRITITANT/NARCOTIC. ACUTE EXPOSURE- ETHYL ALCOHOL CAUSES NO IMMEDIATE IRRITATING EFFECTS.

METHYL ALCOHOL MAY DEFAT THE SKIN AND CAUSE MILD DERMATATIS. IT IS
READILY ABSORBED THROUGH THE SKIN AND MAY CAUSE SYMPTOMS AS WITH ACUTE
INHALATION, PRINCIPALLY ACIDOSIS, CENTRAL NERVOUS SYSTEM DEPRESSION
AND OPTIC NEURITIS.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE TO ETHYL ALCOHOL MAY CAUSE DERMATITIS.

METHYL ALCOHOL MAY CAUSE ECZEMA, REDNESS, AND SCALING.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO ATTENTION IMMEDIATELY.

EYE CONTACT: CORROSIVE.

ACUTE EXPOSURE- ETHYL ALCOHOL VAPORS AT 5,000-10,000 PPM MAY CAUSE TEMPORARY IRRITATION. DIRECT CONTACT MAY CAUSE IMMEDIATE BURNING, LACRIMATION, LACRIMATION, TEMPORARY INJURY OF THE CORNEA AND HYPEREMIA OF THE CONJUNCTIVA.

METHYL ALCOHOL MAY CAUSE SUPERFICIAL CORNEAL LESIONS.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE TO ETHYL ALCOHOL MAY CAUSE CONJUCTIVITIS.

BLURRED OR DIMMED VISION FOLLOWED BY TRANSIENT OR PERMANENT BLINDNESS, WITH OPTIC NEURITIS, EYE PAIN AND ATROPHY, CONCENTRIC VISUAL FIELDS, AND PHOTOPHOBIA MAY OCCUR FROM INHALATION, SKIN ABSORPTION, OR INGESTION OF METHYL ALCOHOL.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER, OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (AT LEAST 15-20 MINUTES). IN CASE OF BURNS, APPLY STERILE BANDAGES LOOSELY WITHOUT MEDICATION. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:

NARCOTIC. ACUTE EXPOSURE- ETHYL ALCOHOL MAY CAUSE EMOTIONAL LABILITY AND DECREASED INHIBITIONS, WITH EXHILARATION, BOASTFULNESS, TALKATIVENESS, REMORSE, AND BELLIGERENCY. MODERATE INTOXICATION LEADS TO IMPAIRED MUSCULAR COORDINA-TION, SLOWED REACTIONS, SLURRED SPEECH, ATAXIA, AND SLIGHT VISUAL DISTUR-BANCE. SEVERE POISONING RESULTS IN SENSORY DISTURBANCE OR LOSS, WITH VERTIGO AND DIPLOPIA, FLUSHING OF THE FACE, RAPID PULSE, SWEATING, NAUSEA AND VOMITING, AND INVOLUNTARY DEFICATION AND URINATION. CENTRAL HERVOUS SYSTEM DEPRESSION IS INDICATED BY DIZZINESS, DROWSINESS, STUPOR, AND OTHER SIGNS OF NARCOSIS, PROGRESSING TO COMA, WITH IMPAIRED OR ABSENT TENDON REFLEXES. CONVULSIONS MAY OCCUR FROM HYPOGLYCEMIA. THE PUPILS MAY BE HORMAL OR DILATED. SHOCK MAY FOLLOW, WITH HYPOTENSION, TACHYCARDIA, COLD PALE SKIN, AND HYPOTHERMIA. RESPIRATION MAY BE SLOW. DEATH MAY OCCUR FROM RESPIRATORY OR CIRCULATORY FAILURE OR FROM ASPIRATIONPHEUMONITIS. RECOVERY FROM POISONING MAY BE ACCOMPANIED BY HEADACHE, GASTRITIS, INFECT-TION, OR PSYCHOSES WITH UNCONTROLLABLE FEAR, INSOMNIA, TREMORS, AND REST-LESSNESS, FOLLOWED BY VISUAL, AUDITORY, OR GUSTATORY HALLUCINATIONS. EXAG-GERATED REFLEXES, TACHYCARDIA, AND CONVULSIONS ARE POSSIBLE. METHYL ALCOHOL MAY CAUSE SYMPTOMS AS WITH ACUTE INHALATION FROM ACIDOSIS, AND CENTRAL NERVOUS SYSTEM DEPRESSION. BLURRED OR DIMMED VISION, FOLLOWED

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ETHYL ALCOHOL, DENATURED

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BY :ANSIENT OR PERMANENT BLINDNESS, WITH OPTIC NEURI , EYE PAIN AND

ATRUPHY, CONCENTRIC VISUAL FIELDS, AND PHOTOPHOBIA MAY OCCUR. CARDIAC DEPRESSION, PERIPHERAL NEURITIS, LIVER AND KIDNEY DAMAGE AND CEREBRAL AND

PULMOYARY EDEMA ARE POSSIBLE. DEATH IS POSSIBLE FROM RESPIRATORY FAILURE

OR CIRCULATORY COLLAPSE. PROLONGED ASTHENIA AND PARTIAL OR COMPLETE LOSS

OF VISION IN 2-6 DAYS, AND PERMANENT RENAL DYSFUNCTION MAY FOLLOW NON-

FIRST AID- IF VICTIM IS CONSCIOUS AND NOT CONVULSING, IMMEDIATELY GIVE 2 TO 4 GLASSES OF WATER. INDUCE VOMITING BY TOUCHING FINGER TO BACK OF THROAT. THEN GIVE 1 OUNCE (30 ML) OF MILK OF MAGNESIA.

REACTIVITY

REACTIVITY:

GENERALLY STABLE UNDER NORMAL CONDITIONS. HIGHLY VOLATILE. CONTACT WITH STRONG OXIDIZERS AND INCOMPATIBLES MAY CAUSE FIRES AND EXPLOSIONS. THE SUBSTANCE REACTS WITH ALKALI METALS TO LIBERATE FLAMMABLE HYDROGEN GAS.

INCOMPATIBILITIES:

VIOLENT REACTION WITH NITRIC ACID, ACETYL CHLORIDE, AND ACETYL BROMIDE. IGNIT-ION MAY OCCUR IN REACTIONS WITH BROMINE PENTAFLUORIDE, CHROMIC ANHYDRIDE, CHROMYL CHLORIDE, PERMANGANIC ACID, PLATINUM, POTASSIUM DIOXIDE, POTASSIUM-TERT-BUTOXIDE, AND HYDROGEN PEROXIDE/SULFURIC ACID MIXTURES. EXPLOSIONS MAY OCCUR FROM REACTIONS WITH ALUMINUM SESQUIBROMIDE ETHYLATE, BROMINE PENTAFLUOR-IDE, CALCIUM HYPOCHLORITE, HYDROGEN PEROXIDE-SULFURIC ACID MIXTURES, IODINE-MERCURIC OXIDE MIXTURES, MANGANESE PERCHLORATE-2,2-DIMETHOXY PROPANE MIXTURES, SOME PERCHORATES RECRYSTALLIZED FROM ETHANOL (SUCH AS SILVER PERCHLORATE AND URANYL PERCHLORATE), PERCHLORIC ACID, PERMANGANATES TREATED WITH SULFURIC ACID, PERMANGANIC ACID, POTASSIUM SUPEROXIDE, SODIUM HYDRAZIDE, AND SULFURIC ACID-SODIUM DICHROMATE MIXTURES. EXPLOSIVE COMPOUNDS MAY BE FORMED IN REAC-TIONS WITH AMMONIUM HYDROXIDE-SILVER(I) OXIDE MIXTURES, HYDROGEN PEROXIDE, IODINE-PHOSPHORUS, SILVER/NITRIC ACID, AND SILVER NITRATE. CHROMYL CHLORIDE CAUSES ETHANDL AND AMMONIA TO IGNITE. CONTACT WITH STRONG OXIDIZERS MAY CAUSE FIRES OR EXPLOSIONS. REACTIONS WITH ALKALI METALS LIBERATE FLAMMABLE HYDROGEN GAS. (ETHYL ALCOHOL)

VIOLENT REACTIONS WILL OCCUR WHEM METHYL ALCOHOL REACTS WITH CALCIUM CARBIDE, MAGNESIUM, AND CYANURIC CHLORIDE. METHANOL AND BERYLLIUM HYDRIDE REACT INTENSELY & 200 C. REACTIONS WITH BROMINE ARE INTENSELY EXOTHERMIC. THERE IS A CHANCE FOR POSSIBLE IGNITION WHEN METHANOL REACTS WITH NICKEL IN THE PRESENCE OF NICKEL CATALYST. REACTIONS WITH CHLOROFORM/SODIUM HYDROXIDE MIXTURES IS EXPLOSIVE AND REACTIONS WITH CHROMIC ANHYDRIDE HAVE EXPLOSIVE CAPABILITIES. CONTACT WITH STRONG OXIDANTS MAY CAUSE FIRE AND EXPLOSION. (METHYL ALCOHOL)

-DECOMPOSITION:

COMBUSTION MAY RELEASE TOXIC OXIDES OF CARBON.

POLYMERIZATION: WILL NOT OCCUR.

CONDITIONS TO AVOID

MAY BE IGHITED BY HEAT, SPARKS OR FLAMES. CONTAINER MAY EXPLODE IN HEAT OF

ETHYL ALCOHOL, DENATURED PAGE 06 OF 06
OFF TO SEWER MAY CREATE FIRE OR EXPLOSION HAZARD.

CHEST CO.

OCCUPATIONAL SPILL:
SHUT OFF IGNITION SOURCES. DO NOT TOUCH SPILLED MATERIAL. STOP LEAK IF YOU
CAN DO IT WITHOUT RISK. USE WATER SPRAY TO REDUCE VAPORS. FOR SMALL SPILLS,
TAKE UP WITH SAND OR OTHER ABSCREENT MATERIAL AND PLACE INTO CONTAINERS FOR
LATER DISPOSAL. FOR LARGER SPILLS, DIKE FAR AHEAD OF SPILL FOR LATER
DISPOSAL. NO SMOKING, FLAMES OR FLARES IN HAZARD AREA! KEEP UNNECESSARY PEOPLE
AWAY; ISOLATE HAZARD AREA AND DENY ENTRY.

PROTECTIVE EQUIPMENT

VENTILATION:

PROVIDE LOCAL EXHAUST VENTILATION OR GENERAL DILUTION VENTILATION TO MEET PERMISSIBLE EXPOSURE LIMITS.

RESPIRATOR:

33,000 PPM (LOWER EXPLOSIVE LIMIT) - SUPPLIED-AIR RESPIRATOR WITH SEPARATE AIR SUPPLY.

FIREFIGHTING- SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATIONS WITH A RESPIRATOR ARE NOT RECOMMENDED ABOVE THE LOWER EXPLOSIVE LIMIT (3.3%).

CLOTHING:

EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE CLOTHING AND EQUIPMENT TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WITH THIS SUBSTANCE.

GLOVES:

EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.

EYE PROTECTION:

EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-PROOF SAFETY GOOGLES TO PREVENT THIS LIQUID FROM CONTACTING THE EYE. DO NOT WEAR CONTACT LENSES WHEN WORKING WITH CHEMICALS.

AUTHORIZED - ALLIED FISHER SCIENTIFIC
CREATION DATE: 11/14/85 REVISION DATE: 11/14/85

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ACC16550 PAGE 01 OF 06

NITRIC ACID
NITRIC ACID
NITRIC ACID

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC CHEMICAL DIVISION 1 REAGENT LANE FAIR LAWN NJ 07410 (201) 796-7100

EMERGENCY CONTACTS: GASTON L. PILLORI (201) 796-7100

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SUBSTANCE IDENTIFICATION

SUBSTANCE: **NITRIC ACID**

CAS-NUMBER 7697-37-₽

TRADE NAMES/SYNONYMS:
AQUA FORTIS; HYDROGEN NITRATE; AZOTIC ACID; NITRYL HYDROXIDE; A-200; A-200C;
A-200S; A-198; A-202; A-206-C;

CHEMICAL FAMILY: INORGANIC ACTO

MOLECULAR FORMULA: H-N-03

MOL WT 63.02

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=0 REACTIVITY=0 PERSISTENCE=0

COMPONENTS AND CONTAMINANTS

COMPONENT: HYDROGEN NITRATE

PERCENT: 70

COMPONENT: WATER

PERCENT: 30

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS: 2 PPM (5 MG/M3) OSHA TWA; 2 PPM NIOSH RECOMMENDED TWA; 2 PPM ACGIH TWA; 4 PPM ACGIH STEL

PHYSICAL DATA

DESCRIPTION: COLORLESS FUMING LIQUID WITH AN ACRID ODOR; SUFFOCATING

FUMES. THE ODOR IS NOT CONSIDERED AN ADEQUATE WARNING PROPERTY.

BOILING POINT: 181 F (83 C) MELTING POINT: -44 F (-42 C)

SPECIFIC GRAVITY: 1.5 VAPOR PRESSURE: 62 MMHG @ 25 C

ODOR THRESHOLD: <5.0 PPM VAPOR DENSITY: 2.2

SOLVENT SOLUBILITY: ETHER

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD: INCREASES THE FLAMMABILITY OF COMBUSTIBLES, ORGANIC MATERIAL, AND READILY OXIDIZABLE MATERIALS, CAUSING IGNITION OF SOME. SEVERE EXPLOSION HAZARD BY REACTION WITH MANY INCOMPATIBLES, INCLUDING METALLIC POWDERS, CARBIDES, HYDROGEN SULFIDE, AND TURPENTINE. IN OR NEAR FIRE, MATERIAL EMITS TOXIC AND REACTIVE NITROGEN OXIDES AS GASES.

FLASH POINT: NONCOMBUSTIBLE

FIREFIGHTING MEDIA: WATER SPRAY

FIREFIGHTING: MOVE CONTAINER FROM FIRE AREA IF POSSIBLE. COOL CONTAINERS EXPOSED TO FLAMES WITH WATER FROM SIDE UNTIL WELL AFTER FIRE IS OUT. FOR MASSIVE FIRE IN STORAGE AREA, USE UNMANNED HOSE HOLDER OR MONITOR NOZZLES; ELSE WITHDRAW FROM AREA AND LET FIRE BURN (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3, GUIDE PAGE 44).

EXTINGUISH USING AGENTS INDICATED. IF LARGE AMOUNTS OF COMBUSTIBLE MATERIALS ARE INVOLVED, USE WATER SPRAY OR FOG IN FLOODING AMOUNTS. USE WATER SPRAY TO ABSORB CORROSIVE VAPORS. COOL CONTAINERS WITH FLOODING AMOUNTS OF WATER FROM AS FAR A DISTANCE AS POSSIBLE. AVOID BREATHING CORROSIVE VAPORS; KEEP UPWIND

TOXICITY

430 MG/KG ORAL-HUMAN LDLO; 110 MG/KG UNKNOWN-MAN LDLO; CARCINOGEN STATUS: NONE. NITRIC ACID IS A SEVERE EYE, MUÇOUS MEMBRANE, AND SKIN IRRITANT.

HEALTH EFFECTS AND FIRST AID

CORROSIVE. 100 PPM IS IMMEDIATELY DANGEROUS TO LIFE AND HEALTH.
ACUTE EXPOSURE- MAY CAUSE COUGHING, HEADACHE, DIZZINESS, AND WEAKNESS,
DELAYED SYMPTOMS MAY INCLUDE DRYNESS OF THE THROAT AND NOSE, CHEST PAIN OR
TIGHTNESS, DYSPNEA, FROTHY SPUTUM, HYPOTENSTION AND CYANOSIS FOLLOWED BY
PNEUMONITIS AND PULMONARY EDEMA, WHICH MAY BE FATAL. IF PATIENT RECOVERS,
SCAR TISSUE MAY CAUSE STRICTURE OF THE PYLORUS OR ESOPHAGUS.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE CAUSES DENTAL EROSION FOLLOWED BY JAW NECROSTS, CHRONIC COUGH AND BRONCHITIS OR CHEMICAL PNEUMONITIS AND GASTROINTESTINAL DISTURBANCES.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. MAINTAIN AIRWAY AND ADMINISTER OXYGEN IF AVAILABLE. KEEP AFFECTED PERSON WARM AND AT REST.

SKIN CONTACT: CORROSIVE.

ACUTÉ EXPOSURE DIRECT CONTACT WITH LIQUID OR CONCENTRATED VAPOR CAUSES IMMEDIATE SEVERE AND PENETRATING BURNS, STAINING THE SKIN YELLOW OR YELLOWISH-BROWN.

CHRONIC EXPOSURE- PROLONGED OR REPEATED EXPOSURE MAY CAUSE DERMATITIS.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). IN CASE OF CHEMICAL BURNS, COVER AREA WITH STERILE, DRY DRESSING. BANDAGE SECURELY, BUT NOT TOO TIGHTLY. GET MEDICAL ATTENTION.

EYE CONTACT:

CORROSIVE.
ACUTE EXPOSURE- DIRECT CONTACT WITH THE LIQUID MAY CAUSE PAIN, PHOTOPHOBIA,
TEARING, EDEMA, CORNEAL ULCERATION, SEVERE BURNS, AND NECROSIS OF THE
DEEPER TISSUES WITH PERMANENT DAMAGE AND BLINDNESS IS POSSIBLE.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE MAY CAUSE CONJUNCTIVITIS.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER, OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). IN PRESENCE OF BURNS, APPLY STERILE BANDAGES LOOSELY WITHOUT MEDICATION. GET MEDICAL ATTENTION.

INGESTION: CORROSIVE.

ACUTE EXPOSURE— IMMEDIATE PAIN IN THE MOUTH, THROAT, AND STOMACH MAY BE FOLLOWED BY VOMITING, AND DIARRHEA OF DARK PRECIPATED BLOOD. HYPOTENSION, OLIGURIA, ANURIA, SEVERE, POSSIBLY FATAL, CIRCULATORY COLLAPSE, AND ASPHYXIA FROM EDEMA OF THE GLOTTIS ARE POSSIBLE. BURNS OF THE GASTROINTESTINAL TRACT MAY BE SEVERE ENOUGH TO CAUSE PERFORATION OF THE ESOPHAGUS AND STOMACH WHICH MAY BE FOLLOWED BY MEDIASTINITUS OR PERITONITIS, INDICATED BY FEVER.

FIRST AID- IF VICTIM IS CONSCIOUS, GIVE HIM LARGE QUANTITIES OF WATER IMMEDIATELY TO DILUTE THE ACID. DO NOT INDUCE VOMITING. GIVE PATIENT 1 OUNCE (30 ML) OF MILK OF MAGNESIA. GET MEDICAL ATTENTION IMMEDIATELY.

REACTIVITY

REACTIVITY:
STABLE UNDER NORMAL TEMPERATURES AND PRESSURES. HOWEVER NITRIC VAPOR AND/OR
NITRIC OXIDES ARE QUIETLY EVOLVED. ALSO SUNLIGHT CATLAYSES THE FORMATION OF
THE OXIDES AND THIS GIVES A YELLOW COLOR TO THE CONCENTRATED ACID.

INCOMPATIBILITIES:
EASILY OXIDIZED SUBSTANCES, EXAMPLES FOLLOW:

EXPLOSION: EPICHLOROHYDRIN, CESIUM CARBIDE, CUPRIC NITRIDE, CYANIDES, TOLUENE, METALS, 1,2-DIAMINOETHANE BISTRIMETHYL GOLD, DINITROTOLUENE, ACETONITRILE, 5-EHTYL-2-METHYL PYRIDINE, CYCLOPENTADIENE, BENZENE, METAL CARBIDES, 4-METHYLCYCLOHEXANONE, NITROBENZENE AND WATER, NITROMETHANE, POLYDIBROMOSILANES, PHOSPHORUS TRICHLORIDE, POTASSIUM HYPOPHOSPHITE (ON EVAPORATION), RUBIDIUM CARBIDE, SELENIUM IODOPHOSPHIDE, SULFUR DIOXIDES,

016550 PAGE 04 OF 06 THIOCIANATES, THIOCYANIC ACID METAL SALTS, THIOPHENES, TETRABORANE, PROBABLE EXPLOSION: ACETONE AND ACETIC ACID, SULFURIC ACID AND GLYCERIDES, TRIAZINE AND TRIFLUOROACETIC ANHYDRIDE @ 36 C.
POSSIBLE EXPLOSION: ACETIC ACID, I-AMINOTHIAZOLE AND SULFURIC ACID, CYANATES, 1,3-CYCLOPENTADIENE, FLURORINE, LACTIC ACID AND HYDROGEN FLUORIDE, MESITYLENE, ORGANIC SUBSTANCES AND SULFURIC ACID, ORGANIC SUBSTANCES AND PERCHLORATES, PHTHALIC ACID OR PHTHALIC ANHYDRIDE AND SULFURIC ACID, REDUCING AGENTS, SULFURIC ACID, TITANTUM ALLOY. EXPLOSION BY FRICTION OR IMPACT: ACETIC ANHYDRIDE. EXPLOSIVE OXIDATION: NON-METAL OXIDES- ARSINE, PHOSPHINE, OR TETRABORANE, DIPHENYLDISTIBENE. POSSIBLE EXPLOSION BY IMPACT : TITANIUM-MAGNESIUM ALLOY. VIOLENT REACTION: ACRYLONITRILE, ALCOHOLS, ARSINE, CARBON (PULVERIZED), CHLORINE TRIFLUORIDE, CUPROUS NITRIDE, CYCLIC KETONES, CYCLOHEXANOL, ETHANOL, GERMANIUM, HYDRAZINE, SULFUR HALIDES, SULFURIC ACID AND TEREPHTHALIC ACID, THIOALDEHYDES OR THIOKETONES, URANIUM, URANIUM ALLOYS. VIOLENT OXIDATION: ACETONE AND SULFURIC ACID, SULFAMIC ACID. VIOLENT DECOMPOSITION: BUTANETING IN TONITRON: CROTONAL DEHYDE, TETRAPHOSPHORUS VIOLENT DECOMPOSITION RESULTING IN IGNITION: CROTONALDEHYDE, TETRAPHOSPHORUS TRITODIDE. POSSIBLE VIOLENT REACTION: ANTIMONY. POSSIBLE VIOLENT EXOTHERMIC REACTION: ANION EXCHANGE RESIN. INTENSE EXOTHERMIC REACTION: ACROLEIN, ALLYL ALCOHOL, ALLYL CHLORIDE, 2-AMINOETHANOL, AMMONIUM HYDROXIDE, BISMUTH, N-BUTYRALDEHYDE, CHLOROSULFONIC ACID, CRESOL, CUMENE, DIISOPROPYL ETHER, ETHYLENEDIAMINE, POLYALKENES, GLYOXAL, ISOPRENE, MESITYL OXIDE, 2-METHYL-5-ETHYLPYRIDINE, OLEUM, PROPYLENE OXIDE, PROPIOLACTONE (BETA-), PYRIDENE, SODIUM HYDROXIDE, VINYL ACETATE, VINYLDENE CHLORIDE, VINYL ACETATE, VINYLDENE CHLORIDE,
INTENSE REACTION: DIETHYLETHER, HYDRAZOIC ACID, P-XYLENE IN THE PRESENCE OF
SULFURIC ACID, SELENIUM, SODIUM AZIDE, TOLUENE, TRIMETHYLTRIOXANE.
IGNITION WITH POSSIBLE EXPLOSION: HYDROGEN TELLURIDE.
IGNITION: ANILINE, BORON PHOSPHIDE, BROMINE PENTAFLUÓRIDE, N-BUTYLMERCAPTAN,
CALCIUM HYPOPHOSPHITE, DIBORANE, DIPHENYL TIN, M-ETHYL ANILINE, ETHYL
PHOSPHINE, FURFURYL ALCOHOL, HALOGEN PHOSPHIDES, HYDROGEN IODIDES, LITHIUM,
METALS, PHOSPHONIUM IODIDE, PHOPHORUS,
SELENIUM HYDRIDE, SODIUM, TERFENES,
TOLUIDINE, TRIETHYLGALLIUM MONOETHYL ETHER COMPLEX, UNS-DIMETHYLHYDRAZINE.
POSSIBLE IGNITION: AMMONIA, ANION EXCHANGE RESIN AND CHROMITES OR DICHFOMATE,
AROMATIC AMINES, DIVINYL ETHER, DIENE OR ACETYLENE DERIVATIVES, LITHIUM,
REDUCING AGENTS. REDUCING AGENTS. INCANDESCENT REACTION: BORON, FERROUS OXIDE (POWDER), HYDROGEN SULFIDE, LITHIUM SILICIDE, SELENIUM HYDRIDE, MAGNESIUM PHOSPHIDE, MANGANESE, ZINC. FORMATION OF HIGHLY EXPLOSIVE PRODUCTS: NITROAROMATIC HYDROCARBONS. FORMATION OF EXPLOSIVE PRODUCTS: ACETYLENE, 4-CHLORO-2-NITROANILINE, CYCLOHEXYLAMINE, 2.6-DI-T-BUTYL PHENOL, DICHLOROMETHANE ETHANOL AND SILVER, 5-ETHYL-2-PICOLINE, HYDROGEN PEROXIDE AND KETONES, HYDROGEN PEROXIDE AND THIOUREA, INDANE AND SULFURC ACID, METAL SALICYLATES, PHENYLORTHOPHOSPHORIC ACID DISODIUM SALT, TITANIUM. FÖRMATION OF POSSIBLY EXPLOSIVE PRODUCTS: BENZOTHIOPHENE DERIVATIVES. FORMATION OF EASILY COMBUSTIBLE ESTER: CELLULOSE. DETONATABLE MIXTURE (DEPENDING ON AMOUNT OF WATER PRESENT): NITROBENZENE. DECOMPOSITION: DECOMPOSES ON EXPOSURE TO AIR OR ORGANIC MATTER, OR WITH HEAT, TO RELEASE

DECOMPOSES ON EXPOSURE TO AIR OR ORGANIC MATTER, OR WITH HEAT, TO RELEASE HIGHLY TOXIC FUMES OR OXIDES OF NITROGEN, INCLUDING NITRIC OXIDE AND NITROGEN DIOXIDE, AND HYDROGEN NITRATE, REACTS WITH THE FOLLOWING TO RELEASE TOXIC GASES: SULFIDES, CARBONATES, CYANIDES, VIOLENT REACTION WITH ALL CARBIDES,

GAS MIXILIE EVOLVED (N204) REACTS STRONGLY WITH HYD CARBONS, FLUORINE, OR FORMALDEHYDE.

POLYMERIZATION: WILL NOT OCCUR.

жини CONDITIONS TO AVOID

MAY IGNITE COMBUSTIBLE MATERIALS (WOOD, PAPER, OIL, ETC.). REACTS VIOLENTLY WITH WATER AND FUELS. FLAMMABLE, POISONOUS GASES MAY ACCUMULATE IN TANKS AND HOPPER CARS. RUNOFF TO SEWER MAY CREATE FIRE OR EXPLOSION HAZARD. AVOID CONTACT WITH OR STORAGE WITH INCOMPATIBLE MATERIALS, INCLUDING THOSE MATERIALS AND CLASSES OF MATERIALS LISTED IN THE REACTIVITY SECTION. HEATING MAY INCREASE THE EVOLUTION OF NITRIC ACID VAPOR AND/OR NITROGEN OXIDES (GASES) BEYOND AN ACCEPTABLE LEVEL.

OCCUPATIONAL SPILL:
KEEP COMBUSTIBLES (WOOD, PAPER, OIL AND OTHER EASILY OXIDIZABLE MATERIALS)
AWAY FROM SPILLED MATERIAL. WEAR PERSONAL PROTECTIVE EQUIPMENT. DO NOT TOUCH
SPILLED MATERIAL. STOP LEAK IF YOU CAN DO IT WITHOUT RISK. USE WATER SPRAY TO
REDUCE VAPORS. DILUTE SPILLS OR LEAKS WITH PLENTY OF WATER. NEUTRALIZE
RESIDUE WITH (A) ALKALI, SUCH AS SODA ASH, LIME, LIMESTONE; OR (B) OTHER
SUITABLE NEUTRALIZATION MATERIALS. ADEQUATE VENTILATION IS REQUIRED TO
ELIMINATE ANY NITROGEN OXIDES RELEASED AND, IF SODA ASH OR LIMESTONE IS USED,
CO2. ABSORB WITH EXCESS SODA ASH, SCOOP UP AND PLACE IN A SUITABLE E.G. GLASS
OR PLASTIC CONTAINER AND CLOSE. LABEL 'OXIDIZER'. KEEP OUT OF SEWERS AND WATER
SOURCES. KEEP UNNECESSARY PEOPLE AWAY. ISOLATE HAZARD AREA AND DENY ENTRY.
VENTILATE CLOSED SPACES BEFORE ENTERING.

PROTECTIVE EQUIPMENT

VENTILATION:
PROVIDE LOCAL EXHAUST VENTILATION, PROCESS ENCLOSURE OR GENERAL DILUTION VENTILATION TO MEET PERMISSABLE EXPOSURE LIMITS REQUIREMENTS. EQUIPMENT MUST BE CORROSION-RESISTANT.

RESPIRATOR:

EXPOSURE LIMIT TO 100 MG/M3
SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

TYPE 'C' SUPPLIED-AIR RESPIRATOR OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE OR CONTINUOUS FLOW MODE.

> 100 MG/M3, INCLUDING THE IDLH LEVEL, 250 MG/M3SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE
OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE,
OR USE EQUIVALENT RESPIRATOR.

FIREFIGHTING- SELF-CONTAINED BREATHING AFPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

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CLOTHING:
EMPLOYEE MUST WEAR IMPERVIOUS CLOTHING AS NECESSARY TO AVOID ANY POSSIBILITY
OF CONTACT WITH CHEMICAL.

GLOVES:
WEAR IMPERVIOUS GLOVES AS NECESSARY TO AVOID ANY POSSIBLILITY OF CONTACT WITH SUBSTANCE, PREFERRED MATERIALS: VITON OR SARANEX.

EYE PROTECTION:
WEAR FACESHIELD (8 INCH MINIMUM) AND VENTED SAFETY GOGGLES. DO NOT WEAR
CONTACT LENSES WHEN WORKING WITH CHEMICALS.

CREATION DATE: 02/10/85 CIENTIFIC GROUP, INC. REVISION DATE: 10/21/85

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plater plants

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 6810

NIIN: 005866647

Manufacturer's CAGE: 1B464

Part No. Indicator: A

Part Number/Trade Name: 2-PROPANOL

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: ISOPROPYL ALCOHOL, ACS

Manufacturer's Name: FISHER SCIENTIFIC CHEMICAL DIVISION

Manufacturer's Street: 1 REAGENT LANE

Manufacturer's P. O. Box:

Manufacturer's City: FAIR LAWN

Manufacturer's State: NJ

Manufacturer's Country: US

Manufacturer's Zip Code: 07410

Manufacturer's Emerg Ph #: 201-796-7523 Manufacturer's Info Ph #: 201-796-7100

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 002

Tot Safety Entries This Stk#: 011

Status: SE

Date MSDS Prepared: 290CT85

Safety Data Review Date: 04JAN90

Supply Item Manager: CX

MSDS Preparer's Name: GASTON L. PILLORI

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BHGWG

Specification Number: O-C-265

Spec Type, Grade, Class:

Hazard Characteristic Code: F3

Unit Of Issue: CN

Unit Of Issue Container Qty: 1 (5 GAL)

Type Of Container: CAN

Net Unit Weight: 33.36 LBS.

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NRC/State License Number:
Net Explosive Weight:
Net Propellant Weight-Ammo:
Coast Guard Ammunition Code:
______
                Ingredients/Identity Information
______
Proprietary: NO
Ingredient: ISOPROPYL ALCOHOL (SARA III)
Ingredient Sequence Number: 01
Percent: 100
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: NT8050000
CAS Number: 67-63-0
OSHA PEL: 400 PPM/500 STEL
ACGIH TLV: 400 PPM/500STEL;9192
Other Recommended Limit: NOT ESTABLISHED
______
                Physical/Chemical Characteristics
______
Appearance And Odor: COLORLESS LIQUID WITH SLIGHT ODOR RESEMBLING A
MIXTURE OF ACETONE AND ETHANOL
Boiling Point: 181F,83C
Melting Point: -127F, -88C
Vapor Pressure (MM Hg/70 F): 33
Vapor Density (Air=1): 2.1
Specific Gravity: 0.8
Decomposition Temperature:
Evaporation Rate And Ref: N/K
Solubility In Water: MISCIBLE
Percent Volatiles By Volume: N/K
Viscosity:
pH: N/K
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY):
Autoignition Temperature:
Fire and Explosion Hazard Data
______
Flash Point: 53.0F,11.7C
Flash Point Method: CC
Lower Explosive Limit: 2.0
Upper Explosive Limit: 12.7
Extinguishing Media: USE CARBON DIOXIDE, ALCOHOL FOAM, DRY CHEMICAL, OR
WATER FOG.
Special Fire Fighting Proc: FIRE FIGHTERS SHOULD USE NIOSH APPROVED SCBA &
FULL PROTECTIVE EQUIPMENT WHEN FIGHTING CHEMICAL FIRE. USE WATER SPRAY TO
COOL NEARBY CONTAINERS EXPOSED TO FIRE.
Unusual Fire And Expl Hazrds: FIRE OR EXCESSIVE HEAT MAY CAUSE PRODUCTION
```

OF HAZARDOUS DECOMPOSITION PRODUCTS.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): HIGH TEMPERATURES, SPARKS, AND OPEN FLAMES.

ABNORMAL TEMPERATURES AND PRESSURES.

Materials To Avoid: STRONG OXIDIZING AGENTS, PHOSGENE, NITROFORM, HYDROGEN, CHROMIUM TRIOXIDE, HYDROGEN PEROXIDE, METAL ALKYLS.

Hazardous Decomp Products: COMBUSTION MAY RELEASE TOXIC OXIDES OF CARBON.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT APPLICABLE

Health Hazard Data

LD50-LC50 Mixture: ORAL LD50 (RAT) = 5840 MG/KG

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: ACUTE: OVEREXPOSURE MAY LEAD TO CENTRAL NERVOUS SYSTEM DEPRESSION, LEADING TO HEADACHES AND DIZZINESS. EYE: MAY LEAD TO IRRITATION AND WILL INJURE EYE TISSUE IF NOT REMOVED PROMPTLY. SKIN: MAY LEAD TO DERMATITIS. INGESTION: MAY LEAD TO VOMITING. CHRONIC: PROLONGED SKIN CONTACT MAY CAUSE DERMATITIS.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: THIS CHEMICAL IS NOT LISTED AS HAVING ANY EVIDENCE OF BEING CARCINOGENIC.

Signs/Symptoms Of Overexp: OVEREXPOSURE MAY LEAD TO DIZZINESS, HEADACHES, DERMATITIS AND EYE IRRITATION. HIGH VAPOR CONCENTRATIONS ARE ANESTHETIC AND MAY HAVE OTHER CENTRAL NERVOUS SYSTEM EFFECTS.

Med Cond Aggravated By Exp: PERSONS WITH SKIN, HEART, RESPIRATORY, OR ANY OTHER MEDICAL CONDITION SHOULD USE CAUTION WHEN HANDLING OR USING THIS PRODUCT.

Emergency/First Aid Proc: SKIN: IMMEDIATELY FLUSH WITH SOAP AND WATER. GET MEDICAL ATTENTION IF NECESSARY. INHALATION: IMMEDIATELY REMOVE VICTIUM TO FRESH AIR. GIVE CPR IF BREATHING IS STOPPED. GET MEDICAL ATTENTION. EYE: IMMEDIATELY FLUSH WITH WATER FOR 15 MINUTES. GET MEDICAL ATTENTION. INGESTION: GET PROMPT MEDICAL ATTENTION. DO NOT INDUCE VOMITING. KEEP AT REST.

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Precautions for Safe Handling and Use

Steps If Matl Released/Spill: MINOR: ABSORB MATERIAL WITH CLAY,
VERMICULITE, OR SIMILAR ABSORBENT MATERIAL. PLACE IN DISPOSAL CONTAINERS.
MAJOR: DIKE & CONTAIN SPILL. ELIMINATE SOURCES OF IGNITION. SHUT OFF LEAKS.
REMOVE LIQUID BY VACUUM OR ABSORBENT. FLUSH RESIDUE WITH WATER.
Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.

Waste Disposal Method: DISPOSE OF ALL WASTE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. INCINERATION IS RECOMMENDED.

Precautions-Handling/Storing: USE ONLY IN WELL VENTILATED WORK AREA. KEEP CONTAINERS CLOSED WHEN NOT IN USE. FLAMMABLE LIQUID; EMPTY CONTAINERS CAN CONTAIN LIQUID/VAPOR RESIDUE.

Other Precautions: DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXOPSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. EXPLOSION HAZARD. EMPTY DRUMS SHOULD BE COMPLETELY DRAINED, BUNGED & DISPOSED OF.

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Control Measures
_____
Respiratory Protection: USE NIOSH/MSHA APPROVED RESPIRATOR. AIR-SUPPLIED
OR FILTERING TYPE WITH ORGANIC VAPOR CARTRIDGES ARE RECOMMENDED.
Ventilation: LOCAL AND MECHANICAL EXHAUST RECOMMENDED. AVOID OPEN
ELECTRICAL SOURCES NEAR PRODUCT VAPOR AREAS.
Protective Gloves: NEOPRENE, NITRILE, OR POLYVINYL ALCOHOL
Eye Protection: USE CHEMICAL SAFETY GOGGLES & FACESHIELD
Other Protective Equipment: SAFETY SHOES, EYE WASH STATION & SAFETY
SHOWER.
Work Hygienic Practices: DO NOT TAKE INTERNALLY. AVOID SKIN CONTACT. WASH
SKIN AFTER USING PRODUCT. DO NOT EAT, DRINK OR SMOKE IN WORK AREA.
Suppl. Safety & Health Data: NONE
_____
                      Transportation Data
Transportation Action Code:
Transportation Focal Point: D
Trans Data Review Date:
DOT PSN Code: HUD
DOT Proper Shipping Name: ISOPROPANOL
DOT Class: FLAMMABLE LIQUID
DOT Label: FLAMMABLE LIQUID
Limited Quantity:
DOT Mode Indicator:
Identification Number: UN1219
Reportable Qty - Trans File:
DOT/DoD Exemption Number:
IMO PSN Code: ITA
IMO Proper Shipping Name: ISOPROPANOL
IMO Regulations Page Number: 3100
IMO UN Number: 1219
IMO UN Class: 3.2
IMO Subsidiary Risk Label: -
IATA PSN Code: ONH
IATA UN ID Number: 1219
IATA Proper Shipping Name: ISOPROPANOL (ISOPROPYL ALCOHOL)
IATA UN Class: 3
IATA Subsidiary Risk Class:
IATA Label: FLAMMABLE LIQUID
AFR 71-4 PSN Code: FNJ
AFR 71-4 Prop. Shipping Name: ISOPROPANOL
AFR 71-4 Class: FLAMMABLE LIQUID
AFR 71-4 Label: FLAMMABLE LIQUID
AFR 71-4 ID Number: UN1219
AF MMAC Code:
Tech Entry NOS Shipping Name:
Additional Trans Data:
______
                       Disposal Data
```

Disposal Data Action Code:

Disposal Data Focal Point:

Disposal Data Review Date:

Rec # For This Disp Entry:

Tot Disp Entries This Stock#:

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Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
______
                              Label Data
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: E
Common Name of Product:
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: MAY BE POISONOUS IF INHALED OR ABSORBED
THROUGH SKIN. VAPORS MAY CAUSE DIZZINESS OR SUFFOCATION. CONTACT MAY
IRRITATE OR BURN SKIN AND EYES. FIRE MAY PRODUCE IRRITATING OR POISONOUS
GASES. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION.
Protect Eye:
Protect Skin:
Protect Respiratory:
Mfg's Name From Label: FISHER SCIENTIFIC, CHEMICAL DIV.
Mfg's Street From Label: 1 REAGENT LANE
Mfg's P.O. Box From Label:
Mfg's City From Label: FAIR LAWN
Mfg's State From Label: NJ
Mfg's Zip Code From Label: 07410
Mfg's Country From Label: US
Emergency Ph. No. From Label: 201-796-7100 OR 201-796-7523
Year Procured:
```

MATERIAL SAFETY DATA SHEET

PO#: 101493 HACH ORDER#: 625232

MSDS DATE: 9/12/93 CHANGE NO.: 8745

For Assistance, Contact: Regulatory Affairs Dept. PO Box 907 Ames, IA 50010 (800) 227-4224

HACH COMPANY PO BOX 907 AMES, IA 50010

Emergency Telephone # Rocky Mountain Poison Ctr. Luker Plants (303) 623-5716

PRODUCT IDENTIFICATION I.

PRODUCT NAME: SPADNS Fluoride Reagent CHEMICAL NAME: Not applicable CAS NO.: NA FORMULA: Not applicable CHEMICAL FAMILY: Not applicable

II. INGREDIENTS

Hydrochloric Acid PCT: <40 CAS NO.: 7647-01-0 SARA: LISTED TLV: 5 ppm ceiling PEL: 5 ppm ceiling HAZARD: Causes burns

Sodium Arsenite

PCT: <0.1 CAS NO.: 7784-46-5 TLV: 0.2 mg/M3 as As

SARA: LISTED PEL: 0.01 mg/M3 as As

IARC: LISTED NTP: LISTED HAZARD: Extremely toxic; cancer hazard

Other components, each

PCT: <1 CAS NO. I NA SARA: NOT LISTED TLV: Not applicable PEL: Not applicable HAZARD: Not applicable

Demineralized Water

PCT: to 100 CAS NO.: 7732-18-5 SARA: NOT LISTED TLV: Not applicable PEL: Not applicable HAZARD: None

Any component of this mixture not specifically listed (eg. "other components") is not considered to present a carcinogen hazard.

III. PHYSICAL DATA

STATE: liquid APPEARANCE: Dark red solution ODOR: Odorless SOLUBILITY IN: WATER: Miscible ACID: Miscible OTHER: Not determined BOILING POINT: 105C MELTING PT.: NA SPEC GRAVITY: 1.015 pH: <0.5 VAPOR PRESSURE: Not determined VAPOR DENSITY (air=1): ND EVAPORATION RATE: 0.64 METAL CORROSIVITY - ALUMINUM: Corrosive STEEL: 0.207 in/yr STABILITY: Stable STORAGE PRECAUTIONS: Store tightly closed.

IV. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT.: Not applicable METHOD: NA FLAMMABILITY LIMITS - LOWER: NA UPPER: NA SUSCEPTIBILITY TO SPONTANEOUS HEATING: None SHOCK SENSITIVITY: None AUTOIGNITION PT .: ND EXTINGUISHING MEDIA: dry chemical

FIRE/EXPLOSION HAZARDS: May emit toxic fumes of arsenic, sodium oxide and chlorides in fire

HAZARDOUS DECOMP. PRODUCTS: May emit toxic fumes of arsenic, sodium oxide and chlorides in fire

OXIDIZER: No NFPA Codes: Health: 3 Flammability: 0 Reactivity: 0 CONDITIONS TO AVOID: Extreme heat or flames; contact with exidizers, acids, alkalies, active metals such as iron, aluminum or zinc

HEALTH HAZARD DATA

THIS PRODUCT MAY BE: corrosive to eyes, skin and respiratory tract. ACUTE TOXICITY: Oral rat LD50 = 540 mg/Kg = moderately toxic ROUTES OF EXPOSURE: ingestion, inhalation TARGET ORGANS: Not determined CHRONIC TOXICITY: Not determined ROUTES OF EXPOSURE: Not determined TARGET ORGANS: Not determined CANCER INFORMATION: Not applicable ROUTES OF EXPOSURE: Not applicable TARGET ORGANS: Not applicable OVEREXPOSURE: Causes burns. If ingested, causes sedation, twitching. MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with impaired pulmonary function may be at increased risk from fumes.

VI. PRECAUTIONARY MEASURES

Avoid contact with eyes, skin and clothing Do not breathe mist or vapor. Wash thoroughly after handling. PROTECTIVE EQUIPMENT: adequate ventilation, lab grade goggles, disposable latex gloves, lab coat

VII. FIRST AID

EYE AND SKIN CONTACT: Immediately flush eyes and skin with water for 15 minutes. Remove contaminated clothing. Call physician. INGESTION: Do NOT induce vomiting. Give 1 - 2 glasses of water. Call a physician immediately. Never give anything by mouth to an unconscious person. INHALATION: Remove to fresh air. Give artificial respiration if necessary.

Call physician.

VIII. SPILL AND DISPOSAL PROCEDURES

IN CASE OF SPILL OR RELEASE: Cover the contaminated surface with sodium bicarbonate or a soda ash-slaked lime mixture (50-50). Mix and add water if necessary to form a slurry. Scoop up slurry and wash the site with soda ash solution. The neutralized slurry may contain sufficient heavy metal concentration to require landfilling or treatment at an EPA approve site. DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.

IX. TRANSPORTATION DATA

D.O.T. PROPER SHIPPING NAME: Hydrochloric Acid, Solution HAZARD CLASS: 8 ID: UN1789 GROUP: II

I.C.A.O. PROPER SHIPPING NAME: Hydrochloric Acid Solution HAZARD CLASS: 8 ID: UN1789 GROUP: IT

I.M.O. PROPER SHIPPING NAME: Hydrochloric Acid, Solution HAZARD CLASS: 8 ID: UN1789 GROUP: II

Х. REFERENCES

- 1) TLV's Threshold Limit Values and Biological Exposure Indices for 1988-1989. American Conference of Governmental Industrial Hygienists, 1988.
- 2) Air Contaminants, Federal Register, Vol. 54, No. 12, Thursday, January 19, 1989. pp. 2332-2983.
- 3) In-house information
- 4) Technical judgment
- 5) Outside testing.

SARA: This product contains a chemical or chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

PER CALIFORNIA PROPOSITION 65: "WARNING - This product contains a chemical known to the State of California to cause cancer."

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992 FSC: 6810 NIIN: 010103168 Manufacturer's CAGE: 91224 Part No. Indicator: A Part Number/Trade Name: SPADNS REAGENT FOR FLUORIDE (CAT #444) Nuclear Water Data This is not a Nuclear Water Chemical NIIN. General Information Item Name: FLUORIDE REAGENT Manufacturer's Name: HACH COMPANY Manufacturer's Street: N/K Manufacturer's P. O. Box: 907 Manufacturer's City: AMES Manufacturer's State: IA Manufacturer's Country: US Manufacturer's Zip Code: 50010 Manufacturer's Emerg Ph #: 515-232-2533 (303-623-5716 MEDICAL) Manufacturer's Info Ph #: 800-227-4224 Distributor/Vendor # 1: HACH CO. (515-232-2533) Distributor/Vendor # 1 Cage: 4T252 Distributor/Vendor # 2: PRECISION CABLE MFG CO INC Distributor/Vendor # 2 Cage: 54840 Distributor/Vendor # 3: Distributor/Vendor # 3 Cage: Distributor/Vendor # 4: Distributor/Vendor # 4 Cage: Safety Data Action Code: Safety Focal Point: D Record No. For Safety Entry: 002 Tot Safety Entries This Stk#: 002 Status: SM Date MSDS Prepared: 11MAY91 Safety Data Review Date: 19MAR92 Supply Item Manager: CX MSDS Preparer's Name: Preparer's Company: Preparer's St Or P. O. Box: Preparer's City:

Preparer's State: Preparer's Zip Code: Other MSDS Number: MSDS Serial Number: BGDBZ Specification Number: NONE Spec Type, Grade, Class: NONE Hazard Characteristic Code: J6 Unit Of Issue: PT Unit Of Issue Container Qty: 1 PINT Type Of Container: BOTTLE

Net Unit Weight: 1.1 LBS

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NRC/State License Number: N/R
Net Explosive Weight:
Net Propellant Weight-Ammo: N/R
Coast Guard Ammunition Code:
_____
                  Ingredients/Identity Information
______
Proprietary: NO
Ingredient: HYDROGEN CHLORIDE
Ingredient Sequence Number: 01
Percent: <40
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: MW4025000
CAS Number: 7647-01-0
OSHA PEL: C, 5 PPM
ACGIH TLV: C, 5 PPM; 8990
Other Recommended Limit: NOT ESTABLISHED
-----
Proprietary: NO
Ingredient: SODIUM ARSENITE
Ingredient Sequence Number: 02
Percent: <0.5
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: CG3675000
CAS Number: 7784-46-5
OSHA PEL: 0.5 MG AS/M3
ACGIH TLV: 0.2 MG AS/M3
Other Recommended Limit: NOT ESTABLISHED
-----
Proprietary: NO
Ingredient: OTHER COMPONENTS (TYPE NOT SPECIFIED)
Ingredient Sequence Number: 03
Percent: <0.1
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 10032140C
CAS Number: UNKNOWN
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NOT ESTABLISHED
-----
Proprietary: NO
Ingredient: WATER
Ingredient Sequence Number: 04
Percent: TO 100
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: ZC0110000
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CAS Number: 7732-18-5 OSHA PEL: NOT ESTABLISHED ACGIH TLV: NOT ESTABLISHED

Other Recommended Limit: NOT ESTABLISHED

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                Physical/Chemical Characteristics
______
Appearance And Odor: DARK RED LIQUID, NO ODOR
Boiling Point: 221F, 105C
Melting Point: UNKNOWN
Vapor Pressure (MM Hg/70 F): UNKNOWN
Vapor Density (Air=1): UNKNOWN
Specific Gravity: 1.015
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: 0.64 (REFERENCE N/K)
Solubility In Water: MISCIBLE
Percent Volatiles By Volume: >95
Viscosity:
pH: <0.5
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY): UNKNOWN
Autoignition Temperature:
_____
                Fire and Explosion Hazard Data
______
Flash Point: NON-FLAMMABLE
Flash Point Method: N/R
Lower Explosive Limit: N/R
Upper Explosive Limit: N/R
Extinguishing Media: DRY CHEMICALS
Special Fire Fighting Proc: WEAR FIRE FIGHTING PROTECTIVE EQUIPMENT AND A
FULL FACED SELF CONTAINED BREATHING APPARATUS. EVACUATE AREA. COOL FIRE
EXPOSED CONTAINERS WITH WATER SPRAY.
Unusual Fire And Expl Hazrds: FIRE OR EXCESSIVE HEAT MAY CAUSE PRODUCTION
OF TOXIC DECOMPOSITION PRODUCTS.
-----
                      Reactivity Data
-----
Stability: YES
Cond To Avoid (Stability): HIGH TEMPERATURES
Materials To Avoid: STRONG ALKALIS, REACTIVE METALS.
Hazardous Decomp Products: FUMES OF ARSENIC AND CHLORIDES.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NOT APPLICABLE
______
                     Health Hazard Data
______
LD50-LC50 Mixture: ORAL RAT LD50 540 MG/KG
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: YES
Health Haz Acute And Chronic: PRODUCT IS CORROSIVE TO BODY TISSUES.
TOXICITY IS BY CORROSIVITY IN ALL THREE ROUTES OF ENTRY. CAUSES BURNS ON
CONTACT. CHRONIC CONTACT IN DILUTE FORM MAY CAUSE ULCERATION. IT CONTAINS
ARSENIC IN LOW CONCENTRATION WHICH IS TOXIC IF INGESTED OR IF CONTACT IS
PROLONGED OR REPEATED.
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Carcinogenicity - NTP: YES Carcinogenicity - IARC: YES Carcinogenicity - OSHA: YES Explanation Carcinogenicity: THIS PRODUCT CONTAINS INORGANIC ARSENIC WHICH IS LISTED BY IARC, NTP, AND OSHA AS A CARCINOGEN. SEE SUPP. DATA. Signs/Symptoms Of Overexp: EYE:SEVERE IRRITATION, BURNS. SKIN: IRRITATION, BURNS. INHALATION:SEVERE IRRITATION, COUGHING. CHRONIC INHALATION MAY CAUSE ULCERATION. INGESTION:G/I IRRITATION, BURNS, ALSO SEDATION, TWITCHING.

Med Cond Aggravated By Exp: PERSONS WITH A HISTORY OF RESPIRATORY PROBLEMS MAY BE AT INCREASED RISK FROM EXPOSURE.

Emergency/First Aid Proc: EYE:FLUSH WITH WATER 15 MIN. GET MEDICAL CARE. SKIN:REMOVE CONTAMINATED CLOTHING. WASH WITH SOAP & WATER. LAUNDER CLOTHING BEFORE REUSE. INHALATION:REMOVE TO FRESH AIR. RESTORE BREATHING. GET IMMEDIATE MEDICAL CARE. INGESTION: DO NOT INDUCE VOMITING. GIVE MILK OF MAGNESIA, PLUS A LARGE QUANTITY OF WATER. GIVE NOTHING BY MOUTH IF UNCONSCIOUS. GET IMMEDIATE MEDICAL CARE.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: USE APPROPRIATE PROTECTIVE EQUIPMENT & PROCEDURES. NEUTRALIZE WITH SUFFICIENT SODIUM BICARBONATE OR SODA ASH TO FORM A SLURRY. COLLECT FOR DISPOSAL. WASH SITE WITH SODA ASH SOLUTION. Neutralizing Agent: SODIUM BICARBONATE OR 50/50 MIX LIME & SODA ASH Waste Disposal Method: DISPOSE I/A/W FEDERAL, STATE, LOCAL REGULATIONS. Precautions-Handling/Storing: KEEP CONTAINER TIGHTLY CLOSED. Other Precautions:

Control Measures

Respiratory Protection: NOT NORMALLY REQUIRED. IF AIRBORNE CONCENTRATION EXCEEDS TLV, A NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS IS RECOMMENDED (HMIS).

Ventilation: USE LAB HOOD OR OTHER LOCAL EXHAUST VENTILATION TO MEET TLV REQUIREMENTS.

Protective Gloves: IMPERVIOUS, RUBBER OR PLASTIC.

Eye Protection: SAFETY GOGGLES

Other Protective Equipment: EYE WASH STATION AND SAFETY SHOWER. LAB COAT OR PLASTIC SLEEVES AND APRON.

Work Hygienic Practices: OBSERVE GOOD CHEMICAL HYGIENE PRACTICES AND RECOMMENDED PROCEDURES. AVOID ANY CONTACT IF POSSIBLE.

Suppl. Safety & Health Data: MFR STATES THAT INGREDIENTS KEPT PROPRIETARY BY LISTING THEM AS "OTHER COMPONENT" ARE NOT CARCINOGENS.

Transportation Data

Transportation Action Code:
Transportation Focal Point: D
Trans Data Review Date: 92079

DOT PSN Code: HHN

DOT Proper Shipping Name: HYDROCHLORIC ACID MIXTURE

DOT Class: CORROSIVE MATERIAL

DOT Label: CORROSIVE Limited Quantity: YES DOT Mode Indicator:

Identification Number: NA1789

Reportable Qty - Trans File: NO

DOT/DoD Exemption Number:

IMO PSN Code: IEX

IMO Proper Shipping Name: HYDROCHLORIC ACID, SOLUTION

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IMO Regulations Page Number: 8183
IMO UN Number: 1789
IMO UN Class: 8
IMO Subsidiary Risk Label: -
IATA PSN Code: NPG
IATA UN ID Number: 1789
IATA Proper Shipping Name: HYDROCHLORIC ACID SOLUTION
IATA UN Class: 8
IATA Subsidiary Risk Class:
IATA Label: CORROSIVE
AFR 71-4 PSN Code: FCR
AFR 71-4 Prop. Shipping Name: HYDROCHLORIC ACID MIXTURE
AFR 71-4 Class: CORROSIVE MATERIAL
AFR 71-4 Label: CORROSIVE
AFR 71-4 ID Number: NA1789
AF MMAC Code:
Tech Entry NOS Shipping Name:
Additional Trans Data: RQ FOR ARSENIC IS 1 LB. MFR SPECIFIED PROPER
SHIPPING NAME.
______
                          Disposal Data
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
_____
                           Label Data
Label Required: YES
Date of Technical Review: 19MAR92
Label Date: UNDATED
Manufacturer's Label No.: NONE
Label Status: D
Common Name of Product: SPADNS REAGENT FOR FLUORIDE (CAT #444)
Chronic Hazard: YES
Signal Word: DANGER!
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe: X
Contact Hazard-None:
```

Contact Hazard-Slight: Contact Hazard-Moderate: Contact Hazard-Severe: X Fire Hazard-None: X Fire Hazard-Slight: Fire Hazard-Moderate: Fire Hazard-Severe: Reactivity Hazard-None: X Reactivity Hazard-Slight: Reactivity Hazard-Moderate: Reactivity Hazard-Severe: Special Hazard Precautions: POISONOUS; MAY BE FATAL IF INHALED, SWALLOWED OR ABSORBED THROUGH SKIN. CONTACT MAY CAUSE BURNS TO SKIN AND EYES. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY GIVE OFF POISONOUS GASES AND CAUSE WATER POLLUTION. FIRE MAY PRODUCE IRRITATING OR POISONOUS GASES. Protect Eye: X Protect Skin: X Protect Respiratory: X Mfg's Name From Label: HACH COMPANY Mfg's P.O. Box From Label: 907

Mfg's Street From Label: N/K

Mfg's City From Label: AMES

Mfg's State From Label: IA

Mfg's Zip Code From Label: 50010

Mfg's Country From Label: US

Emergency Ph. No. From Label: 515-232-2533 (303-623-5716 MEDICAL)

Year Procured: 1992

SULFURIC ACID **SULFURIC ACID**
SULFURIC ACID

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC CHEMICAL DIVISION 1 REAGENT LANE FAIR LAWN NJ 07410 (201) 796-7100

EMERGENCY CONTACTS: GASTON L. PILLORI (201) 796-7100

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SUBSTANCE IDENTIFICATION

SUBSTANCE: **SULFURIC ACID**

CAS-NUMBER 7664-93-9

TRADE NAMES/SYNONYMS: OIL OF VITRIOL, BOV, DIPPING ACID, VITRIOL BROWN OIL, HYDROGEN SULFATE, NORDHAUSEN ACID, A-300, A-300C, A-300-SI, A-300S, A-298, SO-A-172, SO-A-174, SULFURIO ACIDO (SPAN.);

CHEMICAL FAMILY: INORGANIC ACID .

MOLECULAR FORMULA: H2-S-04 MOL WT: 98.07

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=0 REACTIVITY=2 PERSISTENCE=0

COMPONENTS AND CONTAMINANTS

COMPONENT: SULFURIC ACID

PERCENT: 90 5-98.0

COMPONENT: WATER

PERCENT: 9.5-2.0

OTHER CONTAMINANTS: NONE,

EXPOSURE LIMITS:

1 MG/M3 OSHA TWA; 1 MG/M3 ACGIH TWA; 1 MG/M3 NIOSH RECOMMENDED TWA

PHYSICAL DATA

DESCRIPTION: COLORLESS TO DARK BROWN OILY LIQUID

BOILING POINT: 536 F (280 C) MELTING | POINT: -34 TO + 3 C

SPECIFIC CRAVITY: 1.8 VAPOR PRESSURE 0.001 @ 20 C PH: STRONGLY ACIDIC

SOLUBILITY IN WATER: MISCIBLE ODOR THRESHOLD: 1 MG/M3 VAPOR DENSITY: 3.4

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD: NOT FLAMMABLE BUT HIGHLY REACTIVE AND CAPABLE OF IGNITING FINELY DIVIDED COMBUSTIBLE MATERIALS ON CONTACT. REACTS VIOLENTLY WITH WATER AND ORGANIC MATERIALS WITH EVOLUTION OF HEAT. EXTREMELY HAZARDOUS IN CONTACT WITH MANY MATERIALS, PARTICULARLY CARBIDES, CHLORATES, FULMINATES, NITRATES, PICRATES, POWDERED METALS AND OTHER COMBUSTIBLE MATERIALS. ATTACKS MANY METALS, RELEASING HYDROGEN GAS. IT IS ALSO AN OXIDIZING AGENT IN THE CONCENTRATED FORM.

FLASH POINT: WILL NOT BURN

INHALATION:

FIREFIGHTING MEDIA: DRY CHEMICAL OR CARBON DIOXIDE (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FOR LARGER FIRES, FLOOD AREA WITH WATER FROM A DISTANCE (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FIREFIGHTING: WEAR PERSONAL PROTECTIVE EQUIPMENT. MOVE CONTAINERS FROM FIRE AREA IF POSSIBLE. COOL CONTAINERS EXOSED TO FLAMES WITH WATER FROM SIDE UNTIL AFTER FIRE IS OUT (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3). MELL

EXTINGUISH USING AGENTS INDICATED; DO NOT USE WATER DIRECTLY ON MATERIAL.

IF LARGE AMOUNTS OF COMBUSTIBLE MATERIALS ARE INVOLVED, USE WATER SPRAY
OR FOG IN FLOODING AMOUNTS. USE WATER SPRAY TO ABSORB CORROSIVE VAPORS.
COOL CONTAINERS WITH FLOODING AMOUNTS OF WATER FROM AS FAR A DISTANCE AS
POSSIBLE. AVOID BREATHING CORROSIVE VAPORS, KEEP UPWIND (BUREAU OF EXPLOSIVES,
EMERGENCY HANDLING OF HAZARDOUS MATERIALS IN SURFACE TRANSPORTATION, 1781).

TOXICITY

135 MG/KG UNKNOWN-MAN LDLO; 2140 MG/KG ORAL-RAT LD50; 18 MG/KG INHALATION-GUINEA PIG LD50; 510 MG/M3/2 HOURS INHALATION-RAT LC50; 320 MG/M3/2 HOURS INHALATION-MOUSE LC50; CARCINOGEN STATUS: NONE.

SULFURIC ACID IS A SEVERE EYE, SKIN AND MUCOUS MEMBRANE IRRITANT AND CORROSIVE

HEALTH EFFECTS AND FIRST AID

CORROSIVE/TOXIC.

80 MG/M3 ARE IMMEDIATELY DANGEROUS TO LIFE OR HEALTH.

ACUTE EXPOSURE - EXPOSURE TO CONCENTRATIONS CONTAINING 5 MG/M3 MAY CAUSE

NOSE AND THROAT IRRITATION, HEADACHE, COUGH, AND INCREASE IN RESPIRATORY

RATE OR IMPAIRMENT OF VENTILATORY CAPACITY. DELAYED SYMPTOMS MAY INCLUDE PULMONARY EDEMA, TIGHTNESS IN THE CHEST, CYANOSIS, HYPOTENSION, BRONCHI
TIS, OR EMPHYSEMA. INHALATION OF CONCENTRATED VAPOR MAY CAUSE SERIPUS LUNG DAMAGE.

CHRONIC EXPOSURE- REPEATED EXPOSURE TO THE MIST CAUSES CHRONIC TRACHEO-

BRONCHITIS, EROSION AND DISCOLORATION OF THE TEETH, BRONCHIAL PREMIONIA,

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. MAINTAIN AIRWAY AND ADMINISTER OXYGEN IF AVAILABLE. KEEP AFFECTED PERSON WARM AND AT REST. ADMINISTRATION OF OXYGEN SHOULD BE PERFORMED BY QUALIFIED PERSONNEL. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT: CORROSIVE.

ACUTÉ EXPOSURE- CONTACT CAUSES SEVERE IRRITATION AND PAIN, BURNS AND VESICULATION. MAY PRODUCE SEVERE NECROSIS.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE TO THE LIQUID OR MIST MAY CAUSE IRRITATION AND DERMATITIS.

FIRST AID— REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (AT LEAST 15-20 MINUTES). IN CASE OF CHEMICAL BURNS, COVER AREA WITH STERILE, DRY DRESSING, BANDAGE SECURELY, BUT NOT TOO TIGHTLY. GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT: CORROSIVE.

ACUTÉ EXPOSURE- DIRECT CONTACT WITH THE CONCENTRATED ACID SOLUTION CAUSES SEVERE DAMAGE, OFTEN LEADING TO BLINDNESS. EXPOSURE TO THE MIST CAUSES EYE IRRITATION AND LACRIMATION.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE TO VERY DILUTE SOLUTIONS MAY CAUSE CONJUNCTIVITIS AND LACRIMATION.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER, OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (AT LEAST 15-20 MINUTES). IN CASE OF BURNS, APPLY STERILE BANDAGES LOOSELY WITHOUT MEDICATION. GET MEDICAL ATTENTION 1MMEDIATELY.

INGESTION: CORROSIVE.

ACUTÉ EXPOSURE- SEVERE BURNING PAIN IN THE MOUTH, THROAT, AND ABDOMEN FOLLOWED BY VOMITING AND DIARRHEA OF DARK, PRECIPITATED BLOOD. ASPHYXIA MAY OCCUR FROM SWELLING OF THE THROAT. PERFORATION OF THE ESOPHAGUS AND STOMACH MAY OCCUR.

FIRST AID- IF VICTIM IS CONSCIOUS, GIVE HIM LARGE QUANTITIES OF WATER IMMEDIATELY TO DILUTE THE ACID. DO NOT INDUCE VOMITING. GIVE PATIENT 1 OUNCE (30 ML) OF MILK OF MAGNESIA. GET MEDICAL ATTENTION IMMEDIATELY.

REACTIVITY

REACTIVITY: STABLE AT ORDINARY PRESSURES UP TO THE BOILING POINT, 280 C.

INCOMPATIBILITIES: REDUCING AGENTS AND OTHER MATERIALS, EXAMPLES FOLLOW:

ACETIC ANHYDRIDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN

ACC22350 PAGE 04 OF 07 TEMPERATURE AND PRESSURE. ACETONE CYANHYDRIN: POSSIBLE EXPLOSION. ACETONE AND NITRIC ACID: ACETONE WILL DECOMPOSE VIOLENTLY WHEN BROUGHT IN CONTACT WITH MIXED SULFURIC-NITRIC ACIDS. ACETONE AND POTASSIUM DICHROMATE: IGNITION. ACETONITRILE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE ACROLEIN: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND ACRYLONITRILE, WATER: VIOLENT EXOTHERMIC, PERHAPS EXPLOSIVE REACTION. ACETALDEHYDE: VIOLENTLY POLYMERIZED. ALCOHOLS AND HYDROGEN PEROXIDE: POSSIBLE EXPLOSION. ALLYL ALCOHOL: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. ALLYL CHEORIDE: ALLYL CHLORIDE MAY VIOLENTLY POLYMERIZE. 2-AMINOETHANOL: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMMERATURE AND PRESSURE. AMMONIUM HYDROXIDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. AMMONIUM TRIPERCHROMATE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. ANILINE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. ALKYL NITRATES: DELAYED VIOLENT REACTION. SALIS (HYDRATES): EXPLOSION ON HEATING. BROMATES AND METALS: POSSIBLE IGNITION AND FIRE. BROMINE PENTAFLUORIDE: VIOLENT REACTION. N-BUTYRALDEHYDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. CARBIDES: CONCENTRATED SULFURIC ACID IS EXTREMELY HAZARDOUS IN CONTACT WITH CESTUM ACETYLENE CARBIDE: IGNITION. CHLORATES: ALL CHLORATES, WHEN BROUGHT IN CONTACT WITH SULFURIC ACID MAY GIVE OFF EXPLOSIVE CHLORINE DIOXIDE GAS. A VIOLENT EXPLOSION IS USUAL. CHLORATES AND METALS: IGNITION LIKELY. CHLORINE TRIFLUDRIDE: VYOCENT EXPLOSION. CHLOROSULFORIC ACID: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. CUPROUS NITRIDE: VIOLENT REACTION. BENZYL ALCOHOL: EXPLOSIVE ON HEATING. DITSOBUTYLENE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. DIMETHYLBENZYLCARBINOL AND HYDROGEN PEROXIDE: EXPLOSION. EFICHLOROHYDRIN: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. ETHANOL AND HYDROGEN PEROXIDE: POSSIBLE EXPLOSION. TEMPERATURE AND PRESSURE. ETHYLENE GLYCOL: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. ETHYLENIMINE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE FULMINATES: SULFURIC ACID IS EXTREMELY HAZARDOUS IN CONTACT WITH FULMINATES. HYDROCHLORIC ACID: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. HYDEOFLUGRIC ACID: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN

TEMPERATURE AND PRESSURE.

REACTION. P. & PRESSURE 130F NESSTREE STRUCTURE TO THE FOLLOWING STRUCTURE ASSET TO THE ACTO THE SESSION TO STRUCT THE ACTO TO STRUCTURE STR

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ACID-METAL INCREASE FROM THE F RUBIDIUM ACETYLENE CARBIDE: BURNS WITH SULFURIC ACID.
SILVER PERALS
ALKALI METALS
ALKALI METALS
ALKALI METALS
SODIUM TETRABORATE: UTOLENT EXOTHERMIC REACTION.
SODIUM THIOCYANATE: VIOLENT EXOTHERMIC REACTION.
SODIUM CHEORATE: VIOLENT REACTION
SODIUM CHEORATE: VIOLENT REACTION
SODIUM CHEORATE: VIOLENT REACTION
SODIUM CHEORATE: POSSIBLE FIRE OR EXPLOSION
SODIUM HYDROXIDE: MIXING IN A CLOSED CONTAINER CAUSED
SUGARS, ES G. SUCROSE: EVOLVES CARBON MONOXIDE.
STYRENE MONOMER: MIXING IN A CLOSED CONTAINER CAUSED AN
TOLUENE AND PRESSURE
TOLUENE AND NITRIC ACID: VIOLENT REACTION.
VINYL ACETAILE: MIXING IN A CLOSED CONTAINER CAUSED AN Z

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RATE OXIDES, SULFUR 5 FUMES TOXIC HIGHLY TITION: EMITS DECOMPOS QUIETLY HEATED

POLYMERIZATION: WILL NOT OCCUR.

CONDITIONS TO AVOID

MAY IGNITE COMBUSTIBLE MATERIALS (WOOD, PAPER, OIL, ETC.). VIOLENT REACTION WITH WATER. FLAMMABLE, POISONOUS GASES MAY ACCUMULATE IN CONFINED SPACES. AVOID HEATING TO THE POINT WHERE AN UNACCEPTABLE LEVEL OF SULFUR OXIDES RESULTS FROM EMISSION. AVOID LEAKY OR CORRODIBLE CONTAINERS AND CONNECTORS. AVOID CONTACT WITH OR STORAGE WITH INCOMPATIBLE MATERIALS, INCLUDING THOSE LISTED IN THE REACTIVITY SECTION.

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OCCUPATIONAL SPILL:
KEEP COMBUSTIBLES (WOOD, PAPER, OIL, ETC.) AWAY FROM SPILLED MATERIAL KEEP
MATERIALS AWAY. WEAR PERSONAL PROTECTIVE EQUIPMENT, DO NOT TOUCH SPILLED MATERIAL. DO NOT GET WATER INSIDE CONTAINERS. DO NOT FUT WATER ON LEAK OR SPILL AREA. CLEAN UP ONLY UNDER THE SUPERVISION OF AN EXPERT. COVER AND ABSORB WITH SODA ASH, ADDING CAREFULLY TO MINIMIZE SPLASHING OR SPATTERING. SCOOP UP AND PLACE IN GLASS CONTAINERS FOR LATER DISPOSAL. CLOSE TIGHTLY AND LABEL CORROSIVE, KEEP UNNECESSARY PEOPLE AWAY. ISOLATE HAZARD AREA AND DENY ENTRY. KEEP OUT OF SEWERS, WATERWAYS AND OTHER WATER SOURCES.

PROTECTIVE EQUIPMENT

VENTILATION: PROVIDE LOCAL EXHAUST OR PROCESS ENCLOSURE VENTILATION TO MEET PUBLISHED EXPOSURE LIMITS. EQUIPMENT MUST BE RESISTANT TO CORROSION BY ACIDS AND OXIDIZERS.

RESPIRATOR: EXPOSURE LIMIT TO 50 MG/M3-GÄS MÄSK WITH A CHIN-STYLE, FRONT- OR BACK-MOUNTED ACID GAS CANISTER AND A HIGH-EFFICIENCY PARTICULATE FILTER. HIGH-EFFICIENCY PARTICULATE RESPIRATOR WITH A FULL FACEPIECE. SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE, HELMET OR HOOD. SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE.

>50 MG/M3, INCLUDING THE IDLH LEVEL, 80 MG/M3-TYPE C SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE OR WITH A FULL FACEPIECE, HELMET, OR HOOD OPERATED IN CONTINUOUS-FLOW MODE AND WITH ESCAPE PROVISION TOR USE EQUIVALENT RESPIRATOR.

FIREFIGHTING-SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

CLOTHING: WEAR APPROPRIATE PROTECTIVE CLOTHING TO AVOID ANY POSSIBILITY OF SKIN CONTACT 'WITH LIGUIDS CONTAINING MORE THAN 12 SULFURIC ACID. AVOID REPEATED OF PROLONGED SKIN CONTACT WITH LIQUIDS CONTAINING 1% OR LESS SULFURIC ACID.

GLOVES:
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES AND A
FACE-SHIELD TO PREVENT ANY POSSIBILITY OF CONTACT WITH THIS SUBSTANCE,
SOLUTION OR MISTS. PREFERRED MATERIALS: POLYETHYLENE, VITON AND SARANEX

EYE PROTECTION:
EMPLOYEE MUST WEAR SPLASH-PROOF SAFETY GOGGLES AND A FACESHIELD TO PREVENT
ANY POSSIBILITY OF CONTACT WITH THIS SUBSTANCE, ITS SOLUTION OR MISTS. DO NOT
WEAR CONTACT LENSES WHEN WORKING WITH CHEMICALS.

WHERE THERE IS ANY POSSIBILITY THAN AN EMPLOYEE'S EYES MAY BE EXPOSED TO THIS SUBSTANCE, ITS SOLUTION OR MISTS, THE EMPLOYER SHALL PROVIDE AN EYE-WASH FOUNTAIN WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

AUTHORIZED - FISHER SCIENTIFIC GROUP, INC.
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1-611 10 ACC40077 PAGE 01 dF 07 **SULFURIC ACID SOLUTIONS, 0.05-4.9%**
SULFURIC ACID SOLUTIONS, 0.05-4.9%
SULFURIC ACID SOLUTIONS, 0.05-4.9% MATERIAL SAFETY DATA SHEET FISHER SCIENTIFIC EMERGENCY CONTACTS: CHEMICAL DIVISION GASTON L. FILLORI 1 REAGENT LANE FAIR LAWN NJ 07410 (201) 796-7100 (201) 796-7100 THE INFORMATION BELOW IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS INFORMATION FOR THEIR PARTICULAR PURPOSES. SUBSTANCE IDENTIFICATION CAS-NUMBER 7664-93-9 SUBSTANCE: **SULFURIC ACID SOLUTIONS, 0.05-4.9%** TRADE NAMES/SYNONYMS: UN 1830; SOA212, 226 CHEMICAL FAMILY: INORGANIC ACID → MOLECULAR FORMULA: H2-S-04 MOL WT: 98.07 CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=0 REACTIVITY=1 PERSISTENCE=0 COMPONENTS AND CONTAMINANTS COMPONENT: SULFURIC ACID PERCENT: 4.9 COMPONENT: WATER PERCENT: 95.4 COMPONENT: SULFURIC ACID PERCENT: 1.0 COMPONENT: WATER PERCENT: 99.0 COMPONENT: SULFURIC ACID PERCENT: 0.5 COMPONENT: WATER PERCENT: 99.5 COMPONENT: SULFURIC ACID PERCENT: 0.22 COMPONENT: WATER PERCENT: 99,78 COMPONENT: SULFURIC ACID PERCENT: 0.05 COMPONENT: FORMALDEHYDE PERCENT: 0.04 COMPONENT: WATER PERCENT: 99.9

EXPÓSURE LIMITS:

SULFURIC ACID:

1 MG/M3 OSHA TWA
1 MG/M3 ACGIH TWA
1 MG/M3 NIOSH RECOMMENDED TWA

PHYSICAL DATA

→ DESCRIPTION: COLORLESS LIQUID. BOILING POINT: 212 F (100 C).

MELTING POINT: 32 F (0 C) SPECIFIC GRAVITY: 1.0

VAPOR PRESSURE: 14 MMHG @ 20 C WATER EVAPORATION RATE: (ETHER = 1) >1

PH: ACIDIC SOLUBILITY IN WATER: SOLUBLE VAPOR DENSITY: 0.7 WATER

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
NEGLIGIBLE FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

HOWEVER, CONTACT WITH COMMON METALS YIELDS FLAMMABLE HYDROGEN GAS.

FLASH POINT: WILL NOT BURN

FIREFIGHTING MEDIA:
DRY CHEMICAL OR CARBON DIOXIDE
(1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR ALCOHOL FOAM (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FIREFIGHTING:
WEAR PERSONAL PROTECTIVE EQUIPMENT. MOVE CONTAINERS FROM FIRE AREA IF
POSSIBLE. COOL CONTAINERS EXPOSED TO FLAMES WITH WATER FROM SIDE UNTIL WELL
AFTER FIRE IS OUT (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 580093).

USE AGENTS SUITABLE FOR TYPE OF FIRE. COOL CONTAINERS WITH FLOODING AMOUNTS OF WATER, APPLY FROM AS FAR A DISTANCE AS POSSIBLE. AVOID BREATHING CORROSIVE AND TOXIC VAPORS AND MISTS, KEEP UPWIND (BUREAU OR EXPLOSIVES EMERGENCY HANDLING OF HAZARDOUS MATERIALS IN SURFACE TRANSPORTATION, 1981).

TOXICITY

1380 UG EYE-RABBIT SEVERE IRRITATION; 3MG/M3/24W INHALATION-HUMAN TOLO (MIST); 2140 MG/KG ORAL-RAT LD50; 18 MG/M3 INHALATION-GUINEA PIG LC50; 178 PPM/7 HOUR INHALATION-RAT LCLO (MIST); 140 PPM/3.5 HOUR INHALATION-MOUSE LCLO (MIST); CARCINOGEN STATUS: NONE.

SULFURIC ACID, VAPOR OR MIST, IS A SEVERE EYE, MUCOUS MEMBRANE, AND SKIN IRRITANT.

HEALTH EFFECTS AND FIRST AID

INHALATION:
CORROSIVE/TOXIC. 80 MG/M3 IS IMMEDIATELY DANGEROUS TO LIFE OR HEALTH.
ACUTE EXPOSURE—EXPOSURE TO CONCENTRATIONS CONTAINING 5 MG/M3 MAY CAUSE
NOSE AND THROAT IRRITATION, HEADACHE, COUGH, AN INCREASE IN RESPIRATORY
RATE OR IMPAIRMENT OF VENTILATORY CARACITY. DELAYED SYMPTOMS MAY INCLUDE
INCLUDE PULMONARY EDEMA, TIGHTNESS IN THE CHEST, CYANOSIS, HYPOTENSION,

CHRONIC EXPOSURE - REPEATED EXPOSURE TO THE MIST CAUSES CHRONIC TRACHED-BRONCHITIS, EROSION AND DISCOLORATION OF THE TEETH, BRONCHIAL PNEUMONIA, OR GASTROINTESTINAL DISTURBANCES.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND AT REST.

SKIN CONTACT: CORROSIVE.

ACUTÉ EXPOSURE- CONTACT CAUSES SEVERE IRRITATION AND PAIN, BURNS, AND VESICULATION.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE TO THE LIQUID OR MIST MAY CAUSE IRRITATION AND DERMATITIS.

FIRST AID— REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS, (APPROXIMATELY 15-20 MINUTES). IN CASE OF CHEMICAL BURNS, COVER THE AREAS WITH STERILE, DRY DRESSING. BANDAGE OF SECURELY, BUT NOT TOO TIGHTLY. GET MEDICAL ATTENTION.

EYE CONTACT: CORROSIVE.

ACUTÉ EXPOSURE- DIRECT CONTACT WITH THESE ACID SOLUTIONS CAUSES SEVERE DAMAGE, POSSIBLY LEADING TO BLINDNESS. EXPOSURE TO THE MIST CAUSES EYE IRRITATION AND LACRIMATION.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE MAY CAUSE CONJUNCTIVITIS,

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER, OCCASIONALLY LIFTING THE UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES) IN CASE OF BURNS, APPLY STERILE BANDAGES LOOSELY WITHOUT MEDICATION. GET MEDICAL ATTENTION.

INGESTION: CORROSIVE.

ACUTE EXPOSURE - INGESTION PRODUCES SERIOUS BURNS OF THE MOUTH AND ESOPHAGUS. THERE MAY BE PAIN IN THE ABDOMEN FOLLOWED BY VOMITING AND DIARRHEA OF DARK PRECIPITATED BLOOD. ASPHYXIA CAN OCCUR FROM SWELLING OF THE THROAT. PERFORATION OF THE ESOPHAGUS AND STOMACH MAY OCCUR.

FIRST AID- IF VICTIM IS CONSCIOUS, GIVE HIM LARGE QUANTITIES OF WATER IMMEDIATELY TO DILUTE THE ACID. DO NOT INDUCE VOMITING. GIVE PATIENT 1

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REACTIVITY

REACTIVITY: STABLE UNDER NORMAL PRESSURES UP TO THE BOILING POINT, APPROXIMATELY 100 C.

INCOMPATIBILITIES: ALKALIS, AMINES, WATER-REACTIVE MATERIALS AND OTHER MATERIALS, EXAMPLES FOLLOW:

ACETIC ANHYDRIDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.

ACETONE CYANHYDRIN: POSSIBLE EXPLOSION.
ACETONE AND NITRIC ACID: ACETONE WILL DECOMPOSE VIOLENTLY WHEN BROUGHT IN
CONTACT WITH MIXED SULFURIC-NITRIC ACIDS.

ACETONE AND POTASSIUM DICHROMATE: IGNITION.

ACETONITRILE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE,

ACROLEIN: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.

ACRYLONITRILE: VIGOROUS EXOTHERMIC REACTION. ALCOHOLS AND HYDROGEN PEROXIDE: POSSIBLE EXPLOSION.

ALLYL ALCOHOL: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE

ALLYL CHLORIDE: ALLYL CHLORIDE MAY VIOLENTLY POLYMERIZE.

2-AMINOETHANOL: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.

AMMONIUM HYDROXIDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.

AMMONIUM TRIPERCHROMATE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN

TEMPERATURE AND PRESSURE.
ANILINE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.

BROMATES AND METALS: POSSIBLE IGNITION AND FIRE. BROMINE PENTAFLUORIDE: VIOLENT REACTION.

N-BUTYRALDEHYDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.

CARBIDES: CONCENTRATED SULFURIC ACID IS EXTREMELY HAZARDOUS IN CONTACT WITH CARBIDES,

CESTUM ACETYLENE CARBIDE: IGNITION.

CHLORATES: ALL CHLORATES, WHEN BROUGHT IN CONTACT WITH SULFURIC ACID MAY GIVE OFF EXPLOSIVE CHLORINE DIOXIDE GAS, A VIOLENT EXPLOSION IS USUAL.

CHLORINE TRIFLUORIDE: VIOLENT EXPLOSION.

CHLOROSULFONIC ACID: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN

TEMPERATURE AND PRESSURE.

CUPROUS NITRIDE: VIOLENT REACTION.

DIISOBUTYLENE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.

DIMETHYLBENZYLCARBINOL AND HYDROGEN PEROXIDE: EXPLOSION.

EPICHLOROHYDRIN: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.

ETHANOL AND HYDROGEN PEROXIDE: POSSIBLE EXPLOSION.
ETHYLENE CYANOHYDRIN: VIOLENT REACTION.
ETHYLENE DIAMINE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.

aCC40077 ETHYLENE GLYCOL: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN PAGE 05 OF 07 TEMPERATURE AND PRESSURE. ETHYLENIMINE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE FULMINATES: SULFURIC ACID IS EXTREMELY HAZARDOUS IN CONTACT WITH FULMINATES. IODINE HEPTAFLUORIDE: THE ACID BECOMES EFFERVESCENT. INDANE AND NITRIC ACID: POSSIBLE EXPLOSION. IRON: POSSIBLE EXPLOSION DUE TO HYDROGEN GAS FROM THE ACID METAL REACTION. ISOFRENE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMP. & PRESSURE. MERCURIC NITRIDE: EXPLOSION. MESITYL OXIDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE
AND PRESSURE.
METALS (POWDERED): CONTACT WITH SULFURIC ACID IS EXTREMELY HAZARDOUS.
NITRIC ACID AND GLYCERIDES: EXPLOSION.
P-NITROTOLUENE: EXPLOSION.
PENTASILVER TRIHYDROXYDIAMINOPHOSPHATE: EXPLOSION. PERCHLORIC ACID: FORMATION OF DANGEROUS ANHYDROUS PERCHLORIC ACID. PERMANGANATES AND BENZENE: POSSIBLE EXPLOSION.

1-PHENYL-2-METHYL-PROPYL ALCOHOL AND HYDROGEN PEROXIDE: POSSIBLE EXPLOSION.
PHOSPHORUS: YELLOW PHOSPHORUS IGNITES WHEN PLACED IN BOILING CONCENTRATED. SULFURIC ACID.
PHOSPHORUS ISOCYANATE: VIOLENT REACTION.
PICRATES: CONTACT WITH CONCENTRATED SULFURIC ACID IS EXTREMELY HAZARDOUS. POTASSIUM TERT-BUTOXIDE: IGNITION. SOLFORIDE 13 EXTREMELI MAZARDOU. POTASSIUM CHLORATE: POSSIBLE FIRE AND EXPLOSION. POTASSIUM PERMANGANATE: POSSIBLE EXPLOSION IN THE PRESENCE OF MOISTURE. POTASSIUM CHLORIDE: VIOLENT EXPLOSION. BETA-PROPIOLACTONE: MIXTURES IN CLOSED CONTAINERS CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. PROPYLENE OXIDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN LEMPERATURE AND PRESSURE. PYRIDINE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND RUBIDIUM ACETYLENE CARBIDE: BURNS WITH SULFURIC ACID. SILVER PERMANGANATE: EXPLOSION. SODIUM: REACTS WITH EXPLOSIVE VIOLENCE. SODIUM CARBONATE: VIOLENT REACTION.
SODIUM CHLORATE: POSSIBLE FIRE OR EXPLOSION.
SODIUM HYDROXIDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN STEEL: POSSIBLE EXPLOSION DUE TO HYDROGEN GAS FROM THE ACID-METAL REACTION.
STYRENE MONOMER: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.
TOLUENE AND NITRIC ACID: VIOLENT REACTION. VINYL ACETATE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. ZINC CHLORATE: LIKELY TO CAUSE FIRES AND EXPLOSIONS. DECOMPOSITION:

THERMAL DECOMPOSITION MAY RELEASE TOXIC OXIDES OF SULFUR.

POLYMERIZATION: WILL NOT OCCUR.

ACC40077 PAGE 06 0F 07 CONDITIONS TO AVOID

MAY IGNITE OTHER COMBUSTIBLE MATERIALS (WOOD PAPER, OIL ETC.) IN VIOLENT REACTION WITH WATER FLAMMABLE, POISONOUS GASES MAY ACCUMULATE IN CONFINED SPACES. RUNOFF TO SEWER MAY CREATE FIRE OR EXPLOSION HAZARD.

AVOID CONTACT WITH OR STORAGE WITH INCOMPATIBLE MATERIALS, INCLUDING THOSE LISTED IN THE REACTIVITY SECTION.

SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL: FOR SMALL SPILLS, COVER WITH SODA ASH, PROVIDE VENTILATION, WEAR PERSONAL PROTECTIVE EQUIPMENT, SCOOP UP AND PLACE IN A SUITABLE CONTAINER, CLOSE TIGHTLY AND LABEL 'CORROSIVE', FOR LARGE SPILLS, DIKE UP WITH SODA ASH AS CLOSE TO SPILL AS PRACTICAL TO MINIMIZE ENVIRONMENTAL CONTAMINATION, PUMP WATER SOURCES.

PROTECTIVE EQUIPMENT

VENTILATION: PROVIDE PROCESS ENCLOSURE OR LOCAL EXHAUST VENTILATION TO MEET PERMISSABLE EXPOSURE LIMIT REQUIREMENTS. EQUIPMENT MUST BE RESISTANT TO CORROSION BY

RESPIRATOR:

EXPOSURE CIMIT TO 50 MG/M3GAS MASK WITH A CHIN-STYLE, FRONT, OR BACK-MOUNTED ACID GAS
CANISTER AND A HIGH-EFFICIENCY PARTICULATE FILTER. SUPPLIED AIR RESPIRATOR WITH A FULL FACEPIECE, HELMET, OR HOOD. SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE.

>50 MG/M3, INCLUDING THE IDLH LEVEL, 100 MG/M3-TYPE C SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE, HELMET OR HOOD OPERATED IN POSITIVE PRESSURE MODE OR IN CONTINUOUS-FLOW

FIREFIGHTING- SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

CLOTHING: ' WEAR APPROPRIATE PROTECTIVE CLOTHING TO AVOID ANY POSSIBILITY OF SKIN CONTACT WITH LIQUIDS CONTAINING MORE THAN 1% SULFURIC ACID. AVOID REPEATED OR PROLONGED SKIN CONTACT WITH LIQUIDS CONTAINING 1% OR LESS SULFURIC ACID.

CTOAE2: EMPLOYEE MUST WEAR APPROPRIATE GLOVES TO PREVENT CONTACT WITH THIS SOLUTION ACCORDING TO THE SPECIFICATIONS FOR CLOTHING, GIVEN ABOVE. PREFERRED MATERIALS: POLYETHYLENE, VITON AND SARANEX.

EYE PROTECTION: EMPLOYEE MUST WEAR SPLASH-PROOF SAFETY GOGGLES AND A FACESHIELD TO PREVENT ANY POSSIBILITY OF CONTACT WITH THIS SOLUTION. DO NOT WEAR CONTACT LENSES WHEN WORKING WITH CHEMICALS.

PAGE 07 OF 07

WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES MAY BE EXPOSED TO THIS SOLUTION, THE EMPLOYER SHALL PROVIDE AN EYE-WASH FOUNTAIN WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

AUTHORIZED - FISHER SCIENTIFIC GROUP, INC. CREATION DATE: 01/28/86

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ACC40076 PAGE 01 OF 07

SULFURIC ACID SOLUTIONS, 29.6-70.3%

SULFURIC ACID SOLUTIONS, 29.6-70.3%

SULFURIC ACID SOLUTIONS, 29.6-70.3%

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC CHEMICAL DIVISION 1 REAGENT LANE FAIR LAWN NJ 07410 (201) 796-7100 EMERGENCY CONTACTS: GASTON L. PILLORI (201) 796-7100

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SUBSTANCE IDENTIFICATION

GAS-NUMBER 7664-93+9 SUBSTANCE: **SULFURIC ACID SOLUTIONS, 29.6-70.3%**

TRADE NAMES/SYNONYMS:

SA-173; SA-174; SA-170; SA-437; SA-213; SA-200;

CHEMICAL FAMILY: INORGANIC ACID

MOLECULAR FORMULA: H2-S-04 MOL WT: 98.07

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=0 REACTIVITY=1 PERSISTENDE=0

COMPONENTS AND CONTAMINANTS

COMPONENT: SULFURIC ACID

PERCENT: 29 6-70.3

COMPONENT: WATER

PERCENT: 70 4-29.7

EXPOSURE LIMITS: SULFURIC ACID:

1 MG/M3 OSHA TWA

MĞZMĞ ACGIH TWA

1 MG/M3 NIOSH RECOMMENDED TWA

PHYSICAL DATA

DESCRIPTION: ODORLESS AND COLORLESS LIQUID BOILING POINT: NOT AVAILABLE

SPECIFIC GRAVITY: 1.1-1.3 VAPOR PRESSURE: 14 MMHG @ 20 C WATER

EVAPORATION RATE: (ETHER = 1) >1 PH: ACIDIC SOLUBILITY IN WATER: SOLUBLE

VAPOR DEMSITY: 0.7 WATER

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD: NEGLICIBLE FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME. MODERATE FIRE AND EXPLOSION HAZARD IN CONTACT WITH WATER AND MANY OTHER MATERIALS. CONTACT WITH COMMON METALS CAUSES EMISSION OF FLAMMABLE HYDROGEN GAS.

FLASH POINT: WILL NOT BURN

FIREFIGHTING MEDIA: DRY CHEMICAL OR CARBON DIOXIDE (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR ALCOHOL FOAM (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT | P 5800.3).

FIREFIGHTING: DO NOT GET SOLID STREAM OF WATER ON SPILLED MATERIAL. WEAR PERSONAL PROTECTIVE EQUIPMENT. MOVE CONTAINERS FROM FIRE AREA IF POSSIBLE. COOL CONTAINERS EXPOSED TO FLAMES WITH WATER FROM SIDE UNTIL WELL AFTER FIRE IS OUT (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3)

USE AGENTS SUITABLE FOR TYPE OF FIRE USE WATER IN FLOODING AMOUNTS AS FOG. CONTAINERS WITH FLOODING AMOUNTS OF WATER, APPLY AS FAR A DISTANCE AS FOSSIBLE. AVOID BREATHING CORROSIVE AND TOXIC VAPORS AND MISTS, KEEP UFWIND (BUREAU OF EXPLOSIVE EMERGENCY HANDLING OF HAZARDOUS MATERIAL IN SURFACE TRANSPORTATION, 1981).

TOXICITY

1380 UG EYE-RABBIT SEVERE IRRITATION: 135 MG/KG UNKNOWN-MAN LDLO; 2140 MG/KG ORAL-RAT LD50; 18 MG/M3 INHALATION-GUINEA PIG LC50; TUMORIGENIC DATA (AJEPHS 120(3), 358, 84). SULFURIC ACID IS A SEVERE EYE, SKIN AND MUCOUS MEMBRANE CORROSIVE.

HEALTH EFFECTS AND FIRST AID

INHALATION: CORROSIVE/TOXIC. 80 MG/M3 IS IMMEDIATELY DANGEROUS TO LIFE OR HEALTH.
ACUTE EXPOSURE - EXPOSURE TO CONCENTRATIONS CONTAINING 5 MG/M3 MAY CAUSE
NOSE AND THROAT IRRITATION, HEADACHE, COUGH, AN INCREASE IN RESPIRATORY
RATE OR IMPAIRMENT OF VENTILATORY CAPACITY, DELAYED SYMPTOMS INCLUDE
INCLUDE PULMONARY EDEMA, TIGHTNESS IN THE CHEST, CYANOSIS, HYPOTENSION, BRONCHITIS, OR EMPHYSEMA.

CHRONIC EXPOSURE - REPEATED EXPOSURE TO THE MIST CAUSES CHRONIC TRACHED-BRONCHITIS, EROSION AND DISCOLORATION OF THE TEETH, BRONCHIAL PNEUMONIA, OR GASTROINTESTINAL DISTURBANCES.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. MAINTAIN AIRWAY AND ADMINISTER OXYGEN IF AVAILABLE. KEEP AFFECTED PERSON WARM AND AT REST. ADMINISTRATION OF OXYGEN SHOULD BE PERFORMED BY QUALIFIED PERSONNEL. GET MEDICAL ATTEN-TION IMMEDIATELY.

SKIN CONTACT:

CORROSIVE.
ACUTE EXPOSURE- CONTACT CAUSES SEVERE IRRITATION, PAIN, BURNS, AND VESTCULATION.

- CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE TO THE LIQUID OR MIST MAY CAUSE IRRITATION AND DERMATITIS.
- FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). IN CASE OF CHEMICAL BURNS, COVER THE AREAS WITH STERILE, DRY DRESSING. BANDAGE SECURELY, BUT NOT TOO TIGHTLY. GET MEDICAL ATTENTION.

EYE CONTACT: CORROSIVE.

- ACUTE EXPOSURE DIRECT CONTACT WITH THE CONCENTRATED ACID SOLUTION CAUSES. SEVERE DAMAGE, OFTEN LEADING TO BLINDNESS. DILUTE SOLUTIONS PRODUCE MORE TRANSIENT EFFECTS FROM WHICH RECOVERY MAY BE COMPLETE. EXPOSURE TO THE MIST MAY CAUSE EYE IRRITATION AND LACRIMATION.
- CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE MAY CAUSE CONJUNCTIVITIS
- FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER, OCCASIONALLY LIFTING THE UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). IN CASE OF BURNS, APPLY STERILE BANDAGES LOOSELY WITHOUT MEDICATION. GET MEDICAL ATTENTION.

INGESTION: CORROSIVE.

ACUTE EXPOSURE- INGESTION PRODUCES SERIOUS BURNS OF THE MOUTH AND ESOPHAGUS. THERE MAY BE PAIN IN THE ABDOMEN FOLLOWED BY VOMITING AND DIARRHEA OF DARK PRECIPITATED BLOOD. ASPHYXIA CAN OCCUR FROM SWELLING OF THE THROAT. PERFORATION OF THE ESOPHAGUS AND STOMACH MAY OCCUR.

FIRST AID— IF VICTIM IS CONSCIOUS, GIVE HIM LARGE QUANTITIES OF WATER IMMEDIATELY TO DILUTE THE ACID. DO NOT INDUCE VOMITING. GIVE PATIENT 1 OUNCE (30 ML) OF MILK OF MAGNESIA. GET MEDICAL ATTENTION IMMEDIATELY.

REACTIVITY

REACTIVITY: STABLE AT ORDINARY PRESSURES AT LEAST TO 100 C.

INCOMPATIBILITIES: ALKALINE AND OTHER MATERIALS, EXAMPLES FOLLOW:

ACETIC ANHYDRIDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. ACETONE CYANHYDRIN: POSSIBLE EXPLOSION.

ACETONE CYANHYDRIN: POSSIBLE EXPLOSION.
ACETONE AND NITRIC ACID: ACETONE WILL DECOMPOSE VIOLENTLY WHEN BROUGHT IN
CONTACT WITH MIXED SULFURIC-NITRIC ACIDS.

ACETONE AND POTASSIUM DICHROMATE: IGNITION.
ACETONITRILE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE
AND PRESSURE.

ACROLEIN: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND

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ACC40076
                                                                  PAGE 04 OF 07
  PRESSURE
ACRYLONITRILE: VIGOROUS EXOTHERMIC REACTION.
ALCOHOLS AND HYDROGEN PEROXIDE: POSSIBLE EXPLOSION.
ALLYL ALCOHOL: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE
  AND PRESSURE.
ALLYL CHLORIDE: ALLYL CHLORIDE MAY VIOLENTLY POLYMERIZE
2-AMINOETHANOL: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE
  AND PRESSURE.
AMMONIUM HYDROXIDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN
  TEMPERATURE AND PRESSURE.
AMMONIUM TRIPERCHROMATE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN
TEMPERATURE AND PRESSURE.
ANILINE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE
  PRESSURE.
BROMATES AND METALS: POSSIBLE IGNITION AND FIRE.
BROMINE PENTAFLUORIDE: VIOLENT REACTION
N-BUTYRALDEHYDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN
  TEMPERATURE AND PRESSURE,
CARBIDES: CONCENTRATED SULFURIC ACID IS EXTREMELY HAZARDOUS IN CONTACT WITH
  CARBIDES
CESTUM ACETYLENE CARBIDE: IGNITION.
CHLORATES: ALL CHLORATES, WHEN BROUGHT IN CONTACT WITH SULFURIC ACID MAY GIVE
OFF EXPLOSIVE CHLORINE DIOXIDE GAS. A VIOLENT EXPLOSION IS USUAL. CHLORATES AND METALS: IGNITION LIKELY.
CHLORINE TRIFLUORIDE: VIOLENT EXPLOSION.
CHLOROSULFONIC ACID: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN
  TEMPERATURE AND PRESSURE.
CUPROUS NITRIDE: VIOLENT REACTION.
DITSOBUTYLENE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE
  AND PRESSURE.
DIMETHYLBENZYLCARBINOL AND HYDROGEN PEROXIDE: EXPLOSION.
EPICHLOROHYDRIN: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN
  TEMPERATURE AND PRESSURE.
ETHANOL AND HYDROGEN PEROXIDE: POSSIBLE EXPLOSION.
ETHYLENE CYANOHYDRIN: VIOLENT REACTION,
ETHYLENE DIAMINE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN
  TEMPERATURE AND PRESSURE.
ETHYLENE GLYCOL: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN
  TEMPERATURE AND PRESSURE,
ETHYLENIMINE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE
AND PRESSURE.
FULMINATES: SULFURIC ACID IS EXTREMELY HAZARDOUS IN CONTACT WITH FULMINATES.
HYDROCHLORIC ACID: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN
  TEMPERATURE AND PRESSURE
HYDROFLUORIC ACID: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN
  TEMPERATURE AND PRESSURE.
IODINE HEPTAFLUORIDE: THE ACID BECOMES EFFERVESCENT.
INDANE AND NITRIC ACID: FOSSIBLE EXPLOSION.
IRON: POSSIBLE EXPLOSION DUE TO HYDROGEN GAS FROM THE ACID-METAL REACTION.
ISOPRENE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMP. & PRESSURE.
LITHIUM SILICIDE: INCANDESCENT REACTION.
MERCURIO NITRIDE: EXPLOSION.
MESITYL OXIDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE
  AND PRESSURE.
METALS (FOWDERED): CONTACT WITH SULFURIC ACID IS EXTREMELY HAZARDOUS.
NITRIC ACID AND GLYCERIDES: EXPLOSION.
P-NITROTOLUENE: EXPLOSION.
PENTASILVER TRIHYDROXYDIAMINOPHOSPHATE: EXPLOSION.
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PERCHLORATES: POSSIBLE EXPLOSION.
PERCHLORIC ACID: FORMATION OF DANGEROUS ANHYDROUS PERCHLORIC ACID. PERMANGANATES AND BENZENE: POSSIBLE EXPLOSION.
1-PHENYL-2-METHYL-PROPYL ALCOHOL AND HYDROGEN PEROXIDE: POSSIBLE EXPLOSION. PHOSPHORUS: "YELLOW PHOSPHORUS" IGNITES WHEN PLACED IN BOILING CONCENTRATED SULFURIC ACID. PHOSPHORUS ISOCÝANATE: VIOLENT REACTION PICRATES: CONTACT WITH CONCENTRATED SULFURIC ACID IS EXTREMELY HAZARDOUS. POTASSIUM TERT-BUTOXIDE: IGNITION. POTASSIUM CHLORATE: POSSIBLE FIRE AND EXPLOSION. POTASSIUM PERMANGANATE: POSSIBLE EXPLOSION IN THE PRESENCE OF MOISTURE.
POTASSIUM PERMANGANATE AND POTASSIUM CHLORIDE: VIOLENT EXPLOSION
BETA-PROPIOLACTONE: MIXTURES IN CLOSED CONTAINERS CAUSED AN INCRÉASE IN TEMPERATURE AND PRESSURE. PROPYLENE OXIDE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE. PYRIDINE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.

RUBIDIUM ACETYLENE CARBIDE: BURNS WITH \$ULFURIC ACID.

SILVER PERMANGANATE: EXPLOSION. SODIUM: REACTS WITH EXPLOSIVE VIOLENCE. SODIUM CARBONATE: VIOLENT REACTION.

SODIUM CHLORATE: POSSIBLE FIRE OR EXPLOSION.

SÖDTÜM HYDROXIDE: MIXING IN A CLOSED CÖNTATNER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE,

STEEL: POSSIBLE EXPLOSION DUE TO HYDROGEN GAS FROM THE ACID METAL REACTION. STYRENE MONOMER: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.

TOLUENE AND NITRIC ACID: VIOLENT REACTION.

VINYL ACETATE: MIXING IN A CLOSED CONTAINER CAUSED AN INCREASE IN TEMPERATURE AND PRESSURE.

ZINC CHLORATE: LIKELY TO CAUSE FIRES AND EXPLOSIONS. WATER-REACTIVE MATERIALS, E.G. OLEUM: INCOMPATIBLE.

DECOMPOSITION: HEATING YIELDS HIGHLY TOXIC FUMES OF SULFUR OXIDES AND OF SULFURIC ACID. CORROSIVE MISTS ARE EVOLVED, PARTICULARLY ON BOILING.

POLYMERIZATION: WILL NOT OCCUR.

CONDITIONS TO AVOID

MAY IGNITE OTHER COMBUSTIBLE MATERIALS (WOOD, PAPER, OIL, ETC.) VIOLENT REACTION WITH WATER FLAMMABLE, POISONOUS GASES MAY ACCUMULATE ÎN CONFINED SPACES. RUNOFF TO SEWER MAY CREATE FIRE OR EXPLOSION HAZARD. AVOID HEATING TO THE BOILING POINT, WHERE CORROSIVE AND TOXIC GASES, AND MIST ARE EVOLVED. AVOID LEAKY OR CORRODIBLE CONTAINERS. AVOID CONTACT WITH OR STORAGE WITH INCOMPATIBLE MATERIALS, INCLUDING THOSE LISTED IN THE REACTIVITY SECTION.

SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL: REEP INCOMPATIBLE MATERIALS AWAY (EXCEPT FOR LIMITED USE OF WATER, AS FER RECOMMENDATIONS). KEEP COMBUSTIBLES (WOOD, PAPER, OIL, ETC.) AWAY FROM SPILLED MATERIAL. DO NOT TOUCH SPILLED MATERIAL. WEAR PERSONAL PROTECTIVE EQUIPMENT. DO NOT GET WATER INSIDE CONTAINER. DO NOT PUT WATER ON LEAK OR SPILL AREA. CLEAN UP ONLY UNDER THE SUPERVISION OF AN EXPERT. DIKE SPILL WITH SODA ASH (ADDED CAREFULLY). THEN NEUTRALIZE WITH ADDITIONAL SODA ASH. DO NOT APPLY WATER UNLESS DIRECTED TO DO SO. KEEP UNNECESSARY PEOPLE AWAY. ISOLATE HAZARD AREA AND DENY ENTRY. KEEP OUT OF SEWERS, WATERWAYS AND OTHER WATER SOURGES.

PROTECTIVE EQUIPMENT

VENTILATION:
PROVIDE PROCESS ENCLOSURE OR LOCAL EXHAUST VENTILATION SYSTEM TO MEET
PERMISSIBLE EXPOSURE LIMIT REQUIREMENTS. EQUIPMENT MUST BE RESISTANT TO

RESPIRATOR:

EXPOSURE LIMIT TO 50 MG/M3GAS MASK WITH A CHIN-STYLE, FRONT- OR BACK-MOUNTED ACID GAS CANISTER AND A HIGH-EFFICIENCY PARTICULATE FILTER.
SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE, HELMET OR HOOD.
SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE.

>50 MG/M3, INCLUDING THE IDLH LEVEL, 80 MG/M3-TYPE C SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE OR WITH A FULL FACEPIECE, HELMET OR HOOD OPERATED IN CONTINUOUS-FLOW MODE AND WITH ESCAPE PROVISION, OR USE EQUIVALENT RESPIRATOR.

- FIREFIGHTING-SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATE IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE CLOTHING AND EQUIPMENT TO AVOID ANY POSSIBILITY OF SKIN CONTACT WITH LIQUIDS CONTAINING MORE THAN 1% SULFURIC

GLOVES:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT ANY POSSIBILITY
OF CONTACT WITH THIS SOLUTION, PREFERRED MATERIAL(S): POLYETHYLENE, VITON AND
SARANEX PLASTICS:

EYE PROTECTION:
EMPLOYEE MUST WEAR SPLASH-PROOF SAFETY GOGGLES AND A FACESHIELD TO PREVENT ANY
POSSIBILITY OF CONTACT WITH THIS SOLUTION. DO NOT WEAR CONTACT LENSES WHEN
WORKING WITH CHEMICALS.

WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES MAY BE EXPOSED TO THIS SOLUTION, THE EMPLOYER SHALL PROVIDE AN EYE-WASH FOUNTAIN WITHIN THE IMMEDIATE WORK AREA. FOR EMERGENCY USE.

AUTHORIZED - FISHER SCIENTIFIC GROUP, INC.
CREATION DATE: 08/05/85 REVISION DATE: 11/07/86

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Boiler Plants Rec. From C, Utilities
NOTINES # ROGO!
1 MILBRID PRODUCT TO TO
(Sulfuric Acid) 7664-93-9 (8.1%)
(Sulfuric Acid) 7664-93-9 (8.1%) GAL CONTAINERSS - 1 YR (4)(2.2) = 8.8/bs
2) 70-24 - Nut meg Tech., Inc. (FUEL ADPATINE)
(1,1,1- Trichloroe thane Dipropytene Glycal) 71-55-6 (2.35
55 GAL DRUMS SDRUMS EAR = (165GALS Y.L.) (1274/6)
3) R-0638 Pheno phtbalein Indicator - Taylor Tech. Inc.
(Isopropyl alcohol) 67-63-0 (250%)
3) R-0638 Pheno lphtbal ein Indicator - Taylor Tech. Inc. (Isopropyl alcohol) 67-63-0 (250%) 202 BOTTLES 2/2-3 BOTTLES/YEAR: 5-602/YE
4) R-0630 Chromate Indicator - Taylor Tech. Inc. (Potassium chromate) 7789-00-6 (5%)
(Potassium chromate) 7789-00-6 (5%)
WE DO NOT USE
5) R-0736 Sulfuric Acid, GN - Taylor Tech. Inc. Sulfuric Acid) 7664-93-9 (<5%)
(Sulfurice Acid) 7664-93-9 (<5%)
202 BOTTLES 6 BOTTLES/YR = 1202/YR.

Boiler Plants

- 1). Moly B Date Reagent Taylor Tech. Inc. (Sulfuric Acid) 7664-93-9 (8.1%)
- 2) 7D-24 Nut meg Tech., Inc.
 (4,1,1- Trichloroethane Dipropylene Glycol) 71-55-6 (2.35%)
- 3) R-0638 Phenolphtbalein Indicator Taylor Tech. Inc. (Isopropyl alcohol) 67-63-0 (250%)
- 4) R-0630 Chromate Indicator Taylor Tech. Inc. (Potassium chromate) 7789-00-6 (5%)
- 5) R-0736 Sulfuric Acid, GN Taylor Tech. Inc. Sulfuric Acid) 7664-93-9 (<5%)

Boiler Plant

DOD Hazardous Materials Information System DOD 6050.5-L

AS OF November 1992

FSC: 6810

NIIN: 009030507

Manufacturer's CAGE: 89975

Part No. Indicator: A

Part Number/Trade Name: MOLYBDATE REAGENT

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: MOLYBDATE REAGENT

Manufacturer's Name: TAYLOR TECHNOLOGIES, INC.

Manufacturer's Street: 31 LOVETON CIRCLE

Manufacturer's P. O. Box:

Manufacturer's City: SPARKS

Manufacturer's State: MD

Manufacturer's Country: US

Manufacturer's Zip Code: 21152

Manufacturer's Emerg Ph #: 301-472-4340

Manufacturer's Info Ph #: 301-472-4340

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 001

Tot Safety Entries This Stk#: 001

Status: SM

Date MSDS Prepared: 01FEB92

Safety Data Review Date: 10APR92

Supply Item Manager: CX

MSDS Preparer's Name: STEPHEN M. BACON

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BFVRK

Specification Number: N/R

Spec Type, Grade, Class: N/R

Hazard Characteristic Code: C1

Unit Of Issue: QT

Unit Of Issue Container Qty: 1 QT

Type Of Container: BOTTLE Net Unit Weight: 2.2 LBS

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NRC/State License Number: N/R
Net Explosive Weight: N/R
Net Propellant Weight-Ammo: N/R
Coast Guard Ammunition Code: N/R
______
                Ingredients/Identity Information
_____
Proprietary: NO
Ingredient: SULFURIC ACID (SARA III)
Ingredient Sequence Number: 01
Percent: 8.1
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: WS5600000
CAS Number: 7664-93-9
OSHA PEL: 1 MG/M3
ACGIH TLV: 1 MG/M3; 9192
Other Recommended Limit: NONE SPECIFIED
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Proprietary: NO
Ingredient: SODIUM MOLYBDATE(VI)
Ingredient Sequence Number: 02
Percent: <5
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: QA5075000
CAS Number: 7631-95-0
OSHA PEL: 5 MG/M3 (MO)
ACGIH TLV: 5 MG/M3 (MO); 9091
Other Recommended Limit: NONE SPECIFIED
______
               Physical/Chemical Characteristics
Appearance And Odor: COLORLESS, ODORLESS, WATERLIKE LIQUID.
Boiling Point: 215F, 102C
Melting Point: N/R
Vapor Pressure (MM Hg/70 F): 17
Vapor Density (Air=1): 0.6
Specific Gravity: 1.05
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: UNKNOWN
Solubility In Water: COMPLETE
Percent Volatiles By Volume: 99
Viscosity: N/R
pH: 0.8
Radioactivity: N/R
Form (Radioactive Matl): N/R
Magnetism (Milligauss): N/R
Corrosion Rate (IPY): UNKNOWN
Autoignition Temperature: N/R
______
                Fire and Explosion Hazard Data
______
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Flash Point: NOT APPLICABLE Flash Point Method: N/R Lower Explosive Limit: N/R

Upper Explosive Limit: N/R

Extinguishing Media: NOT FLAMMABLE BUT MAY REACT WITH WATER AND ORGANIC MATTER. USE CARBON DIOXIDE OR DRY CHEMICAL TO EXTINGUISH FLAMES. Special Fire Fighting Proc: DO NOT USE WATER ON ADJACENT FIRES. WEAR SELF-CONTAINED BREATHING APPARATUS AND CHEMICAL PROTECTIVE CLOTHING. Unusual Fire And Expl Hazrds: WILL GENERATE EXPLOSIVE HYDROGEN ON CONTACT WITH METALS. MAY REACT EXPLOSIVELY WITH OTHER CHEMICALS. HIGHLY TOXIC FUMES MAY BE PRODUCED IN FIRE.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): EXTREME HEAT AND TEMPERATURES Materials To Avoid: WATER, METALS, COMBUSTIBLE MATERIALS.

Hazardous Decomp Products: OXIDES OF SULFUR, CARBON, AND SODIUM

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NONE

Health Hazard Data

______ LD50-LC50 Mixture: ORAL LD50 (RAT) IS 2140 MG/KG

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: ACUTE: IRRITATING TO SKIN AND MUCOUS MEMBRANES BUT HAS THE POTENTIAL TO CAUSE BURNS. IF INGESTED, CAN CAUSE BURNS OF THE MOUTH AND PERFORATION OF THE ESOPHAGUS OR STOMACH. CONTACT WITH EYES MAY CAUSE BURNS. CHRONIC: NONE SPECIFIED BY MANUFACTURER.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: NONE OF THE CHEMICALS IN THIS PRODUCT IS LISTED BY IARC, NTP OR OSHA AS A CARCINOGEN.

Signs/Symptoms Of Overexp: EXCEEDING THE TLV CAN RESULT IN DEATH. EYES: REDNESS, TEARING, SEVERE PAIN, BURNS. SKIN: REDNESS, RASH, BURNS. INGESTION: SEVERE ABDOMINAL PAIN, NAUSEA, VOMITING, DIARRHEA. Med Cond Aggravated By Exp: PREEXISTING EYE AND SKIN CONDITIONS Emergency/First Aid Proc: SKIN-FLUSH WELL WITH WATER (15 MIN.) WHILE REMOVING SOILED CLOTHES. WASH AREA THOROUGHLY WITH SOAP & WATER. SEE DOCTOR. EYE-FLUSH WITH COPIOUS AMOUNTS OF WATER FOR 15 MIN. & SEE DOCTOR. INGEST-CALL A DOCTOR IMMEDIATELY. DO NOT INDUCE VOMITING. GIVE LARGE AMOUNTS OF WATER. FOLLOW WITH MILK OF MAGNESIA, MILK OR EGG WHITES.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: NEUTRALIZE. ABSORB WITH VERMICULITE, OR OTHER INERT MATERIAL, AND CONTAINERIZE FOR LATER DISPOSAL.

Neutralizing Agent: SODA ASH

Waste Disposal Method: DISPOSE OF CONTAINERIZED MATERIAL BY INCINERATION OR OTHER METHOD APPROVED OF BY LOCAL, STATE AND FEDERAL REGULATIONS. Precautions-Handling/Storing: AVOID CONTACT WITH SKIN, EYES, AND CLOTHING. AVOID BREATHING CHEMICAL.

Other Precautions: WASH THOUROUGHLY AFTER HANDLING.

Control Measures

______ Respiratory Protection: NONE SPECIFIED BY MANUFACTURER.

Ventilation: NONE SPECIFIED BY MANUFACTURER.

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Protective Gloves: RUBBER GLOVES
Eye Protection: GOGGLES OR FACE SHIELD
Other Protective Equipment: LAB COAT OR, PREFERABLY, RUBBER APRON SHOULD
BE WORN WHEN HANDLING.
Work Hygienic Practices: WASH HANDS AFTER HANDLING. LAUNDER CONTAMINATED
CLOTHING BEFORE REUSE.
Suppl. Safety & Health Data: NONE SPECIFIED BY MANUFACTURER.
Transportation Data
Transportation Action Code:
Transportation Focal Point: D
Trans Data Review Date:
DOT PSN Code: DVR
DOT Proper Shipping Name: CORROSIVE LIQUID, N.O.S.
DOT Class: CORROSIVE MATERIAL
DOT Label: CORROSIVE
Limited Quantity: NO
DOT Mode Indicator:
Identification Number: UN1760
Reportable Qty - Trans File: NO
DOT/DoD Exemption Number: N/R
IMO PSN Code: ESH
IMO Proper Shipping Name: CORROSIVE LIQUIDS, N.O.S.
IMO Regulations Page Number: 8147
IMO UN Number: 1760
IMO UN Class: 8
IMO Subsidiary Risk Label:
IATA PSN Code: HKM
IATA UN ID Number: 1760
IATA Proper Shipping Name: CORROSIVE LIQUIDS, N.O.S.
IATA UN Class: 8
IATA Subsidiary Risk Class:
IATA Label: CORROSIVE
AFR 71-4 PSN Code: DAT
AFR 71-4 Prop. Shipping Name: CORROSIVE LIQUID, N.O.S.
AFR 71-4 Class: CORROSIVE MATERIAL
AFR 71-4 Label: CORROSIVE
AFR 71-4 ID Number: UN1760
AF MMAC Code: NR
Tech Entry NOS Shipping Name: SULFURIC ACID
Additional Trans Data: MIXTURE OF SODIUM MOLYBDATE AND SULFURIC ACID.
Disposal Data
______
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
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2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
______
                              Label Data
Label Required: YES
Date of Technical Review: 10APR92
Label Date: UNDATED
Manufacturer's Label No.: N/R
Label Status: D
Common Name of Product: MOLYBDATE REAGENT
Chronic Hazard: YES
Signal Word: DANGER!
Acute Health Hazard-None:
Acute Health Hazard-Slight: X
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate: X
Contact Hazard-Severe:
Fire Hazard-None: X
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight: X
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: CORROSIVE. ACUTE: IRRITATING TO SKIN AND
MUCOUS MEMBRANES BUT HAS THE POTENTIAL TO CAUSE BURNS. IF INGESTED, CAN
CAUSE BURNS OF THE MOUTH AND PERFORATION OF THE ESOPHAGUS OR STOMACH.
CONTACT WITH EYES MAY CAUSE BURNS. AVOID CONTACT WITH SKIN, EYES, AND
CLOTHING. AVOID BREATHING CHEMICAL. FIRST AID: SKIN-FLUSH WELL WITH WATER
(15 MIN.) WHILE REMOVING SOILED CLOTHES. WASH AREA THOROUGHLY WITH SOAP &
WATER. SEE DOCTOR. EYE-FLUSH WITH COPIOUS AMOUNTS OF WATER FOR 15 MIN. &
SEE DOCTOR. INGEST-CALL A DOCTOR IMMEDIATELY. DO NOT INDUCE VOMITING. GIVE
LARGE AMOUNTS OF WATER. FOLLOW WITH MILK OF MAGNESIA, MILK OR EGG WHITES.
Protect Eye: X
Protect Skin: X
Protect Respiratory:
Mfg's Name From Label: TAYLOR TECHNOLOGIES, INC.
Mfg's Street From Label: 31 LOVETON CIRCLE
Mfg's P.O. Box From Label:
Mfg's City From Label: SPARKS
Mfg's State From Label: MD
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Mfg's Zip Code From Label: 21152 Mfg's Country From Label: US

Year Procured: 1992

Emergency Ph. No. From Label: 301-472-4340

Boiler 7/11.

..ATERIAL SAFETY DATA SHEET

SECTION I - MANUFACTURER'S INFORMATION

Manufacturer's Name: Nutmeg Technologies, Inc.

P.C. Box 309

New Haven, CT 06513

203-777-7691

FAX No. 1-203-777-0784

Emergency Telephone No.: 203-674-3456 or Local Poisindex Facility

Product Name:

7D-24

Chemical Name and Synonyms: N/A

Trade Name and Synonyms: Fuel Oil Additive 7D-24

Chemical Family: N/A

SECTION II - HAZARDOUS INGREDIENTS

Listed Below X Not Applicable

Component Eighly Aromatic	CAS No. 64742-06-9	Percent 84.24	Hazard TLV=100ppm
Naptha 1,1,1-Trichloroethane	71-55-6	2.35	TLV= 50ppm
Dipropulene Glycol Monomethyl Ether	34590-94-8	1.18	TLV=100ppm

SECTION III - PHYSICAL DATA

Boiling Point (deg. F) 357 deg. F Specific Gravity: 0.93

Vapor Pressure (mmHg): 1mm Percent Volatile by Volume: 94% Vapor Density (Air=1): 5 Solubility in Water: 1% by vol.

pH of Undiluted Product: N/A pH (1% Aqueous Solution): 5.87

Appearance and Odor: Dark amber with solvent odor

SECTION IV - FIRE AND EXPLOSION DATA

Listed Below X Not Applicable

Flash Point (Method Used): 130 deg. F. Closed Cup

Flammable Limits: Lower: 0.08% Upper: 6.0%

Extinguishing Media: CO2, foam, dry chemical, water spray or fog.

Special Fire Fighting Procedures: Use air-supplied breathing equipment for enclosed area. Cool exposed containers with water spray. Avoid breathing vapor or fumes.

Unusual Fire & Explosion Hazards: Do not store or mix with strong :idants.

Products evolved when subject to heat or combustion: Carbon monoxide in the case of incomplete combustion.

SECTION V - HEALTH HAZARD DATA

Listed Below X Not Applicable

Threshold Limit Value: Recommended exposure limit is 100 ppm for 8 hour workday.

Target Organs: Kidneys, liver and lungs

Effects of Overexposure: Inhalation of high vapor concentrations may have results ranging from dizziness and headaches to unconsciousness. Prolonged or repeated liquid contact with the skin will dry and defat the skin leading to irritation and dermatitis.

Emergency & First Aid Procedures: EYES: Flush with water for 15 minutes or until irritation subsides. SKIN: Remove any contaminated clothing, and wash skin with soap and warm water. INGESTION: Do NOT induce vomiting - call a physician immediately. INHALATION: If overcome by vapor, remove from exposure immediately; call a physician. If breathing is irregular or stopped, start resuscitation, administer oxygen.

Note to Physician: None

Chronic Effects of Overexposure: Can produce irritation on prolonged or repeated contact.

Other Health Hazards: This material should not present a human cancer risk. However, good personal hygiene practices should be maintained. SECTION VI - REACTIVITY DATA

Stability: Stable X Unstable

Conditions to avoid: None

Incompatability (materials to avoid): strong oxidants: liquid chlorine, concentrated oxygen, sodium or calcium hypochlorite.

Hazardous Combustion or Decomposition Products: Fumes, smoke and carbon monoxide in the case of incomplete combustion.

Hazardous Polymerization: May occur Will not occur X

conditions to avoid: None

SECTION VII - SPILL, LEAK AND WASTE DISPOSAL PROCEDURES

steps to be taken in case material is released or spilled: Remove all ignition sources. Keep people away. Recover free liquid. Add absorbent (sand, earth, sawdust, etc.) to spill area. Avoid breathing vapors. Ventilate confined spaces. Open all windows and doors. Keep petroleum products out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas.

Waste Disposal Methods: Assure conformity with applicable disposal regulations. Dispose of absorbed material at an approved disposal site or facility.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use hydrocarbon vapor canistor or supplied-air respiratory protection in confined or enclosed spaces if needed.

Ventilation:

Local Exhaust: Face velocity >60 FPM

Mechanical: Use explosion-proof equipment

Special: Use only with adequate ventilation*

Other: No smoking or open ignition sources

Protective Clothing: Use chemical-resistant apron or other clothing if needed to avoid repeated or prolonged skin contact.

Protective Gloves: Chemical resistant gloves

Eve Protection: Use goggles and/or face shield

Other Protective Equipment: None

SECTION IX - SPECIAL PRECAUTIONS AND COMMENTS

Precautions to be taken in handling and storage: Keep container closed when not in use. Do not handle or store near heat, sparks, flame or strong oxidants. Adequate* ventilation required.
*Adequate means equivalent to outdoors.

Other Precautions: Avoid breathing vapors. Avoid prolonged or repeated skin contact. Remove contaminated clothing, launder before reuse. Wash skin thoroughly after skin contact.

SECTION X - ADDITIONAL INFORMATION N/A

SECTION XI - TRANSPORTATION

D.O.T. Classification: Combustible Liquid, NOS, NA1993

SECTION XII - MANUFACTURER'S STATEMENT

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200. It contains information that we believe to be true and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Waste Disposal" assumes compliance with Federal, State and Local regulations regarding the disposal of hazardous waste.

May 19, 1988

MATERIAL SAFETY DATA SHEET

JUFACTURER: TAYLOR TECHNOLOGIES, INC

31 LOVETON CIRCLE SPARKS, MD 21152

TELEPHONE: 301-472-4340

1.PPODUCT IDENTIFICATION

CATALOG NO.: R-0638

PRODUCT NAME! Phenolohthalein Indicator

CHEMICAL FAMILY: Alcoholic organic dye solution

2. INGREDIENTS

INGREDIENT	CAS NO.	95	NATURE OF HAZARD		
	67-63-0	(5 i)	Flammable		
Phenolohthalein	77-09-8	< 1	Irritant		
Deionized water	7732-18-5	to 100	None		

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless DODR: Alcohol BOILING PT (F): 180 pH: NA SPECIFIC GRAVITY: .9

UAPOR PRESSURE (mm Hg): 25 UAPOR DENSITY (AIR=1): 1.6

PERCENT VOLATILE BY VOLUME: 99 SOLUBILITY IN WATER: Soluble

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

METHOD: Closed cuo FLASH PT: 75 F.

UEL: 12% FLAMMABLE LIMITS: LEL: 2%

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water soray, or alcohol

SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and full-protective clothing. Cool exposed containers

with water spray. Knock down vapors with water spray.

FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: Vapors flammable. May be ignited by heat, sparks, or flames. May emit toxic

fumes.

NFPA COOE: Health: 1 Flammability: 3 Reactivity: 0 Soecific: NA CONDITIONS TO AVOID: Extreme heat, temperatures. Protect from sparks, flames, oxidizers.

5. HEALTH HAZARD DATA

INGREDIENT: Isopropyl alcohol

TOXICITY: LD50(orl-rat): 5840 mg/kg

PEL: 980 mg/m3

TLU: 980 mg/m3

STEL: 1225 mg/m3

ROUTE(S) OF ENTRY: Inhalation X Ingestion X Skin_X_

TARGET ORGAN(S): Eyes, skin, respiratory tract

CARCINOGENICITY: NTP_No ___ IARC_No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant SKIN: Irritant

INGESTION: Irritant. May cause severe gastrointestinal disturbance.

INHALATION: Irritant. May cause narcosis.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye, skin, and respiratory

conditions

ECAUTIONARY MEASURES

- PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

STORAGE: Cool, dry, well-ventilated area. Avoid direct sunlight.

7.<u>EMERGENCY AND FIRST AID PROCEDURES</u>

EYE AND SKIN CONTACT: Immediately flush eyes with water for 15 minutes. Call physician. Wash skin thoroughly with soap and water. INGESTION: Give large amounts of water. Call physician. Induce vomiting under direction of physician. INHALATION: Remove to fresh air. Call physician.

3.5PILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Absorb with vermiculite or other Containerize for later disposal. DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

9. TRANSPORTATION DATA (U.S. - SURFACE) PROPER SHIPPING NAME: [sopropano] HAZARD CLASS: Flammable liquid IDENTIFICATION NO .: UN1219

NA = Not applicable = Not determined NE = Not established

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DATE PREPARED: March 1990

ATTRIAL SAFETY DATA SHEET

...NUFACTURER: TAYLOR TECHNOLOGIES, INC

31 LOVETON CIRCLE SPARKS, MD 21152

TELEPHONE: 301-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0630

PRODUCT NAME: Chromata Indicator

CHEMICAL FAMILY: Inorganic salt solution

2.INGREDIENTS

. INGREDIENTS	CAS ND.	%	NATURE OF HAZARD		
INGREDIENT	7789-00-6	5	Carcinogen, oxidizer		
Potassium chromate Desonized water	7732-18-5	to 100	None		

This chemical is subject to the reporting requirements of SARA Title [[] lection 313 and 40 CFR 372.

Potassium chromate is not listed specifically in the NTP Annual Report on Carcinogens (latest edition) but would be included under "chromium and certain hromium compounds".

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid : APPEARANCE: Clear, yellow BOILING PT (F): 212-215 pH: 9.1 SPECIFIC GRAVITY: 1.04 UAPOR PRESSURE (mm Hg): 17 UAPOR DENSITY (AIR=1): .6

** PERCENT VOLATILE BY VOLUME: 95 SOLUBILITY IN WATER: Soluble

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

METHOD: NA FLASH PT: NA

UEL: NA FLAMMABLE LIMITS: LEL: NA

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water soray or foam SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)

breathing apparatus and full-protective clothing

FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: Contact with combustible materials may increase fire intensity. May emit toxic fumes. NFPA CODE: Health: 1 Flammability: 0 Reactivity: 0 Specific: DXY

CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong reducing agents, combustible materials.

5. HEALTH HAZARD DATA

INGREDIENT: Potassium chromate

TOXICITY: LDLo(orl-hmn): 50 mg/kg

PEL: .1 mg/m3 (as CrO3)

STEL: NE

TLU: .05 mg/m3 (as Cr)

ROUTE(S) OF ENTRY: Inhalation____ IngestionX SkinX

TARGET ORGAN(S): Eyes, skin, kidneys

CARCINOGENICITY: NTP Yes IARC Yes OSHA_No_

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant. Contact may cause conjunctivitis. SKIN: Irritant. Contact may cause dermatitis.

INGESTION: May cause severe gastrointestinal irritation, circulatory

collapse, coma, toxic nephritis.

INHALATION: NA MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions ECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing

chemical. Wash thoroughly after handling.

STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 15 minutes.

Call physician. Wash skin thoroughly with soap and water. [NGESTION: Give large amounts of water. Call physician. Induce vomiting.

under direction of physician.

INHALATION: NA

8.SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Absorb with vermiculite or other inert material.

Containerize for later disposal.

DISPOSAL: To comply with all local, state, and federal regulations.

9. TRANSPORTATION DATA (U.S. - SURFACE)

PROPER SHIPPING NAME: Not regulated

HAZARD CLASS: NA

IDENTIFICATION NO .: NA

NA = Not applicable

= Not determined

= Not established

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DATE PREPARED: March 1990

MATERIAL SAFETY DATA SHEET

EMUFACTURER: TAYLOR TECHNOLOGIES, INC

31 LOVETON CIRCLE SPARKS, MD 21152

TELEPHONE: 301-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0736 PRODUCT NAME: Sulfuric Acid .6N CHEMICAL FAMILY: Inorganic acid solution

2. INGREDIENTS

INGREDIENT	CAS NO.	9.4	NATURE OF HAZARD		
*Sulfuric acid	7664-93-9	< 5	Irritant acid		
Opiopized water	7772-18-5	to 100	None		

This chemical is subject to the reporting requirements of SARA Title III Section 313 and 40 CFR 372.

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless DOOR: None BOILING PT (F): 212 pH: .7 SPECIFIC GRAVITY: 1 VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .6

PERCENT VOLATILE BY VOLUME: 100 SOLUBILITY IN WATER: Soluble

4 FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

METHOD: NA FLASH PT: NA

UEL: NA FLAMMABLE LIMITS: LEL: NA

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide

SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)

breathing apparatus and special protective clothing

FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May react violently with water. May react with metals to produce hydrogen gas. ignite combustible materials. May emit toxic fumes of sulfur oxides. NFPA CODE: Health: 1 Flammability: 0 Reactivity: 1 Specific: CORR

TLV: 1 ma/m3

CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong

alkali, metals.

5 HEALTH HAZARD DATA

[NGREDIENT: Sulfuric acid

TOXICITY: LD50(orl-rat): 2140 mg/kg

PEL: 1 mg/m3

STEL: 3 mg/m3

ROUTE(S) OF ENTRY: Inhalation____ Ingestion_X Skin_X

TARGET ORGAN(S): Eyes, skin

IARC No OSHA No CARCINOGENICITY: NTP_No__

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant. Contact may cause burns.

SKIN: [rritant. Contact may cause burns.

INGESTION: Irritant. May cause gastrointestinal irritation.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

RECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST ALD PROCEDURES

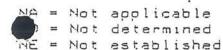
EYE AND SKIN CONTACT: Immediately flush eyes with water for 15 minutes. Call physician. Wash skin thoroughly with baking soda, soap and water. INGESTION: Give large amounts of water or large amounts of water with milk of magnesia. Call physician. DO NOT INDUCE VOMITING. INHALATION: NA

8.SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Neutralize with soda ash. Absorb with vermiculite or other inert material. Containerize for later disposal. DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

9. TRANSPORTATION DATA (U.S. - SURFACE)

PROPER SHIPPING NAME: Sulfuric acid HAZARD CLASS: Corrosive material IDENTIFICATION NO.: UN1830



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DATE PREPARED: March 1990

MEMORANDUM FOR

Chief, Directorate of Missions Operations Equipment Manager, Public Work Center

SUBJECT: Air Emissions Inventory.

- 1. Seneca is scheduled to have a air emissions inventory preformed on its air Ref: Clean Air Act of 1990, Title V Operating Permit Program.
- 2. Under Title V operating permit program federal law required that New York State Department of Environmental Conservation (DEC) have the resources to implement federally mandated air permit and compliance program activities and that these activities be supported through the assessment of permit fees. These fees are based upon the actual tons of pollutants emitted annually from facilities, provided the actual emissions are verifiable. In the absence of actual emissions permit fees will be based on the potential to emit. Potential to emit calculations are based upon 8760 hours of operation per year at maximum design capacity.
- 3. In an effort to provide, accurate operational data for each of SEDA's emission sources, the operators of this equipment must record, maintain and provide to the Environmental Section the following information.

A. Paint Booths (bldg. 323, 612, 317, and 360)

- 1). Amount and type of paint used each time the booth is operational.
- 2). Date and actual run time in hours and/or minutes of the booths ventilation system every time it is operating.

3). Filter change dates.

- 4). Operational problems encountered and any repair or maintenance work preformed.
 - B. Ventilation for woodworking equipment bldg. 113.
- 1). Weight in pounds of the saw dust disposed of from this equipment.
- 2). Date and actual run time in hours and/or minutes of the ventilation system every time it is operating.
- 3). Operational problems encountered and any repair or maintenance work preformed.
 - C. Ventilation for battery storage area bldg. 117.
- 1). Date and actual run time in hours and/or minutes of the ventilation system every time it is operating.
- 2). Operational problems encountered and any repair or maintenance work preformed.

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- D. Ventilation for the Plastic shot blasting operation in Bldg. 317
- 1). Type of material being removed by the shot blasting operation. (paint, grease dirt etc.) Estimated amount of material being removed.
- 2). Date and actual run time in hours and/or minutes of the ventilation system every time it is operating.
- 3). Operational problems encountered and any repair or maintenance work preformed.
 - E. Classified document Incinerator Bldg. 801.
 - 1). Amount in pounds of documents burned.
- Date and actual run time of the incinerator including warm up time if any every time it is operating.
- 3). Operational problems encountered and any repair or maintenance work preformed.
- 4. The requested data will be maintained on file at the emissions site for the entire calendar year after which it will be submitted to the Environmental Section within 10 days of the end of the calendar year. Submission will include a statement that the operational data being submitted is true and accurate and be signed by the person responsible for the operation of the emission source. Data collection shall begin immediately upon receipt of this Memo.

The above listed emission point sources are presently permitted with DEC as active.

- 5. The following emission point sources are no longer in active status.
 - a. Paint booth in bldg.117.
 - b. Classified document incinerator building # 709.
 - c. Paint booth in bldg. 318.
 - d. Abrasive blasting machine in bldg. 360.
 - e. Vapor degreasing machine in bldg. 360.
 - f. Wheelabrator abrasive cleaning machine in bldg. 360.
- 6. The operation of any of the equipment listed in para 5 without prior notification to the DEC is a violation of SEDA's Title V operating permit. Should there be a need to operate any of this equipment the Environmental Section must be notified a minimum of 72 hours prior to their requested operation time.
- 7. POC for these actions is Thomas Grasek Ext 41403.

STEPHEN M. ABSOLOM Facilities Engineer

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Barba - Pitt

MEMORANDUM FOR

Chief, Directorate of Missions Operations

SUBJECT: Building 813 Paint Booth Operation.

- 1. Under Title V operating permit program federal law required that New York State Department of Environmental Conservation (DEC) have the resources to implement federally mandated air permit and compliance program activities and that these activities be supported through the assessment of permit fees. These fees are based upon the actual tons of pollutants emitted annually from facilities, provided the actual emissions are verifiable. In the absence of actual emissions permit fees will be based on the potential to emit. Potential to emit calculations are based upon 8760 hours of operation per year at maximum design capacity.
- 2. In an effort to provide, accurate operational data for each of SEDA's emission sources, the operators of building 813 paint booth must record, maintain and provide to the Environmental Section the following information.
- a). Amount and type of paint (NSN) used each time the booth is operational.
- b). Date and actual run time in hours and/or minutes of the booths ventilation system every time it is operating.
 - c). Filter change dates.
- d). Operational problems encountered and any repair or maintenance work preformed.
- 3. The requested data will be maintained on file at the emissions site for the entire calendar year after which it will be submitted to the Environmental Section within 10 days of the end of the calendar year. Submission will include a statement that the operational data being submitted is true and accurate and be signed by the person responsible for the operation of the emission source. Data collection for this emission point shall begin immediately upon receipt of this Memo.
- 4. Failure to follow these guidelines could result in SEDA having its permit to operate this point source revoked.
- 5. POC for this action is Thomas Grasek Ext 41403.

Street N. MESCLER On of, replace worke

SDSTO-SEI-FE

Thomas Wickerham
New York State Department of Environmental Conservation
Region 8
Air Resources
6274 East Avon-Lima Rd.
Avon, New York 14414

Dear Mr. Wickerham:

This letter is to inform you that due to the down sizing which has occurred at Seneca Army Depot Activity, Facility air permit # 453089-0046, the following nine (9) air contamination point sources are no longer in operation.

- 1. 00117 Paint booth.
- 2. 0709B Classified document incinerator
- 3. 03181 Paint booth.
- 4. 03602 Abrasive blasting ventilation.
- 5. 03603 Vapor degreaser.
- 6. 03604 Abrasive cleaning ventilation.
- 7. 07181 Stationary Combustion boiler.
- 8. 07182 Stationary Combustion boiler.
- 9. 07183 Stationary Combustion boiler.

Request that the status of these point sources be changed from active to inactive and that their total annual operating hours be changed to zero (0).

Should any of these point sources become active again in the future your office will be notified immediately.

Should you have any questions, regarding this matter, contact Mr. Thomas Grasek at (607) 869-1450.

FOR THE COMMANDER:

Stephen M. Absolom Facilities Engineer

MEMORANDUM FOR	Chief.	Public	Works
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SYSIETT: Operation and Reporting of Air Emission Point Sources

- 1. Ref: Memorandum SDSTO-SEI-FE, dtd 28 Oct 93, subj: Operation of ventulation type air emission point sources.
- 2. Required data as follows for Bldg: 8/3

	Type and amount of paint: NSN: 8010-01-276-3639 V Gal 8010-01-229-7544 8010-00-297-2116	: 61.5 13.0 5.0
b.	Total actual run time: Hours: 270 Min: 26 Filter change dates: 10/4/94 . 11/4/94 17/12/04	

 - 5 ∈	rational Problems and	Repairs/Maintenance	Daneau	
•	CLEANING, LUBE	gazza/azcenance	rerrormed:	
4.5				

San	dblasting/Shotblasting System (Ventilated to Outside) SN:
-1 ·	Media Type:
	Type Material Removed:
- •	- J-al actual run time: Hours: Min.
	Filter change dates:
	Sperational Problems and Repairs/Maintenance Performed:
	*
	,

- 3. Operators Certifying Statement for the period 1 Jan thru 31 Dec 94 is as follows: (Check all that apply)
 - Paint Booth not operated during this period:

 Paint Booth does not exist in this bldg:

 Paint Booth Information is true and accurate to the best of my knowledge:

 Operators Name: Blaumput Sig: Sig: Sig:
 - Sandblast/Shotblast System not operated during this period:
 Sandblast/Shotblast System does not exist in this bldg:
 Sandblast/Shotblast System Information is true and accurate to the best of my knowledge:
 Operators Name: JOHN C. BRANNGART Sig: July Burnyan

Note: Supervisors may certify in those cases where an operator has not been assigned or a system does not exist.

4. Fig for above Rick Witter, ext 41-924.

SERALD R. MAINE

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STRIEST: Operation and Reporting of Air Emission Point Sources

1. Ref: Memorandum SDSTO-SEI-FE, dtd 28 Oct 93, subj: Operation of ventilation type air emission point sources.

 Required data as follows for 	prod:	_300
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а.	Type and amount of paint: NSN: 8010-01-276-3639 Gal: 16.5
٤.	Total actual run time: Wown. 173
2 .	Fotal actual run time: Hours: 113 Min: 40
-1.	Operational Problems and Repairs/Maintenance Performed:
	*
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-4 *	ndblasting/Shotblasting System (Ventilated to Outside) SN: NA
b.	Type Material Removed:
b.	Type Material Removed:
5. 2. 2.	Type Material Removed: Est Amount: Gal Total actual run time: Hours: Min:
5. 2. 2.	hadia Type:
5. 2. 2.	Type Material Removed: Est Amount: Gal Total actual run time: Hours: Min:

3. Operators Certifying Statement for the period 1 Jan thru 31 Dec 94 is as follows: (Check all that apply)

Faint Booth not operated during this period: IJAN - 15 WAY 23 MAY - 24 JUST Faint Booth does not exist in this bldg:

Faint Booth Information is true and accurate to the best of my knowledge:

Operators Name: JOHN BRANNGANT Sig: C. Branngat

Sandblast/Shotblast System not operated during this period:
Sandblast/Shotblast System does not exist in this bldg:
Sandblast/Shotblast System Information is true and accurate to the lest of my knowledge:
Operators Name: John C BRANGART Sig:

Note: Supervisors may certify in those cases where an operator has not been assigned or a system does not exist.

1. 900 for above Rick Witter, ext 41/524.

GERALD R. MAINE
Chief, Operations Branch
Mission Operations Division

MEMORANDUM FOR Chief, Public Works

SUBJECT: Operation and Reporting of Air Emission Point Sources

- 1. Ref: Memorandum SDSTO-SEI-FE, dtd 28 Oct 93, subj: Operation of ventilation type air emission point sources.
- 2. Required data as follows for Bldg: 3/7__

a.	int Booth Type/SN: NONE Type and amount of paint: NSN: LAQUER PRIMER Gal: /
	POLYURETHANE 3/4
	ENAMEL PRIMER 3/4
ъ.	Total actual run time: Hours: _/5_ Min: _/0_
	Filter change dates:
₫.	Operational Problems and Repairs/Maintenance Performed:
	*NONE
	*
San	adblasting/Shotblasting System (Ventilated to Outside) SN. 9/472
b.	Type Material Removed: RUST / PAINT / COPPOSITION A TOWNS
b. c.	Type Material Removed: RUST PAINT CORROSION Est Amount: Total actual run time: Hours: 47
b. c.	Type Material Removed: RUST PAINT CORROSION Est Amount: Ga. Total actual run time: Hours: 47 Min: 20
b. c.	Type Material Removed: RUST PAINT CORROS ON Est Amount: Ga. Total actual run time: Hours: 47 Min: 20 Filter change dates: NA Operational Problems and Repairs/Maintenance Parformed.
b. c. d.	Type Material Removed: RUST PAINT CORROS ON Est Amount: Ga. Total actual run time: Hours: 47 Min: 20 Filter change dates: NA Operational Problems and Repairs/Maintenance Parformed.
b. c.	Type Material Removed: RUST PAINT CORROSIONEST Amount: Ga Total actual run time: Hours: Min: Ga Filter change dates: N/A
b. c. d.	Type Material Removed: RUST PAINT CORROS ON Est Amount: Ga. Total actual run time: Hours: 47 Min: 20 Filter change dates: NA Operational Problems and Repairs/Maintenance Parformed.

- as follows: (Check all that apply)
 - a. Paint Booth not operated during this period: _____ Paint Booth does not exist in this bldg: ____ Paint Booth Information is true and accurate to the best of my knowledge: _______ Operators Name: C.D. NICHOLS
 - Sandblast/Shotblast System not operated during this period: _____ Sandblast/Shotblast System does not exist in this bldq: __ Sandblast/Shotblast System Information is true and accurate to the best of my knowledge: _ Operators Name: CD_NICHOLS Sig:

Note: Supervisors may certify in those cases where an operator has not been assigned or a system does not exist.

4. POC for above Rick Witter, ext 41-524.

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MEMORANDUM FOR Chief, Public Works
FUBJECT: Operation and Reporting of Air Emission Point Sources
1. Ref: Memorandum SDSTO-SEI-FE, dtd 28 Oct 93, subj: Operation of
1. Required data as follows for Bldg: _323
Faint Booth Type/SN:2435 a. Type and amount of paint: NSN: Gal:
D. Fotal actual run time: Hours: Min: D. Filter change dates:
Sandblasting/Shotblasting System (Ventilated to Outside) SN: a. Media Type: b. Type Material Removed: c. Cotal actual run time: d. Filter change dates: e. Operational Problems and Repairs/Maintenance Performed:
2. Sperators Certifying Statement for the period 1 Jan thru 31 Dec 94 is as fillips: (Check all that apply) a. Paint Booth not operated during this period: X Paint Booth does not exist in this bldg: Paint Booth Information is true and accurate to the best of my knowledge: Operators Name:
2. Sandblast/Shotblast System not operated during this period: Sandblast/Shotblast System does not exist in this bldg: X Sandblast/Shotblast System Information is true and accurate to the test of my knowledge: Operators Name: JOHN P. HENNESSY Sig: A Communication has not been assigned or a system does not exist.
FIRE SET above Rick Witter, ext 41-524. SERALD R. MAINE

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MEMORANDUM FOR Chief, Public Works

SUBJECT: Operation and Reporting of Air Emission Point Sources

- 1. Ref: Memorandum SDSTO-SEI-FE, dtd 28 Oct 93, subj: Operation of ventilation type air emission point sources (PS).
- 2. Certification Period: 1 Jan 94 thru 31 Dec 94

Paint Booth Type/Mfg: SN/Bar Code: a. Type and Amount of Paint:			
a. Type and Amount of Paint: NSN: Gal: D. Total Actual Run Time: Hours: Min: C. Filter Change Dates: d. Operational Problems and Repairs/Maintenance Performed: * * * 3. Operators Certifying Statement for the Period 1 Jan 94 thru 31 Dec 94. (Check if Applicable) a. Paint Booth, PS # 00612, not operated during this period b. Information provided above is true and accurate to the best of my knowledge. Print Operators Name: ARSON W. ANKERO Sig: * NOTE: Supervisor may certify in those cases where an overator has			
b. Total Actual Run Time: Hours: Min: c. Filter Change Dates: d. Operational Problems and Repairs/Maintenance Performed: * * 3. Operators Certifying Statement for the Period 1 Jan 94 thru 31 Dec 94. (Check if Applicable) a. Paint Booth, PS # 00612, not operated during this period b. Information provided above is true and accurate to the best of my knowledge. Print Operators Name: ARGON W. ANGRAD Sig: **NOTE: Supervisor may certify in those cases where an operator has		Paint Booth Type/Mfg: SN/Bar Code:	-
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Print Operators Name: (ARSON W. LANGERO Sig: LONG) **NOTE: Supervisor may certify in those cases where an operator has			
NOTE: Supervisor may certify in those cases where an operator has not been assigned and system not operated.		Print Operators Name: (ARSON W. LANGERO Sig: LONGE	
		NOTE: Supervisor may certify in those cases where an operator has not been assigned and system not operated.	

4. POC is Rick Witter, ext 41-524.

GERALD R. MAINE

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DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992 FSC: 8010 NIIN: 012297544 Manufacturer's CAGE: 61196 Part No. Indicator: A Part Number/Trade Name: 705020; COATNG, ALIPH. POLYUR. 1-COMP. BROWN 383 _______ Nuclear Water Data ______ This is not a Nuclear Water Chemical NIIN. General Information Manufacturer's Name: PRATT & LAMBERT; PAINTS/CHEMICAL COATING/ADHESIVES Manufacturer's Street: 630 EAST 13TH Manufacturer's P. O. Box: Manufacturer's City: ANDOVER Manufacturer's State: KS Toluene 25% Manufacturer's Country: Manufacturer's Zip Code: 67002 Hlene 25% Manufacturer's Emerg Ph #: 316-733-1361 Manufacturer's Info Ph #: 316-733-1361 methal Iso butal Distributor/Vendor # 1: Distributor/Vendor # 1 Cage: idorolo ke y tone Distributor/Vendor # 2: Distributor/Vendor # 2 Cage: (23)(4)(24)= 240.12/65 Distributor/Vendor # 3: Distributor/Vendor # 3 Cage: Distributor/Vendor # 4: Distributor/Vendor # 4 Cage: Safety Data Action Code: Toluene= (.05)(240.12) = 12.01165 $\pm 4 lene (.05)(240.12) = 12.01165$ Safety Focal Point: N Record No. For Safety Entry: 004 Tot Safety Entries This Stk#: 004 Status: 3 Date MSDS Prepared: 08NOV85 methy (Isobuty (.15) (240,12) = 36,02/bs Safety Data Review Date: 27NOV87 Supply Item Manager: MSDS Preparer's Name: Kettone Preparer's Company: Preparer's St Or P. O. Box: Preparer's City: Preparer's State: Preparer's Zip Code: Other MSDS Number: MSDS Serial Number: BGQZF Specification Number: MIL-C-53039 Spec Type, Grade, Class:

Hazard Characteristic Code: J1

Net Unit Weight: 2,6165/Q4,

Unit Of Issue Container Qty: 1 QT

Unit Of Issue: NK

Type Of Container: N/K

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NRC/State License Number:
 Net Explosive Weight:
 Net Propellant Weight-Ammo:
 Coast Guard Ammunition Code:
 Ingredients/Identity Information
 Proprietary: NO
 Ingredient: TOLUENE (SARA III)
 Ingredient Sequence Number: 01
 Percent: <5
 Ingredient Action Code:
 Ingredient Focal Point: N
 NIOSH (RTECS) Number: XS5250000
 CAS Number: 108-88-3
 OSHA PEL: 50 PPM; 9293
 ACGIH TLV: 100 PPM/150 STEL
 Other Recommended Limit: 100 PPM
 ______
 Proprietary: NO
 Ingredient: XYLENES (O-,M-,P- ISOMERS) (SARA III)
 Ingredient Sequence Number: 02
 Percent: <5
 Ingredient Action Code:
 Ingredient Focal Point: N
NIOSH (RTECS) Number: ZE2100000
CAS Number: 1330-20-7
OSHA PEL: 100 PPM/150 STEL
ACGIH TLV: 100 PPM/150STEL;9192
Other Recommended Limit: 100 PPM
______
Proprietary: NO
Ingredient: 2-BUTOXYETHYL ACETATE; LEL:0.50; VAPOR PRESSURE:1.00.
Ingredient Sequence Number: 03
Percent: 5-10
Ingredient Action Code:
Ingredient Focal Point: N
NIOSH (RTECS) Number: KJ8925000
CAS Number: 112-07-2
OSHA PEL: N/K (FP N)
ACGIH TLV: N/K (FP N)
Other Recommended Limit: N/K (FP N)
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Proprietary: NO
Ingredient: METHYL ISOBUTYL KETONE (SARA III)
Ingredient Sequence Number: 04
Percent: 10-20
Ingredient Action Code:
Ingredient Focal Point: N
NIOSH (RTECS) Number: SA9275000
CAS Number: 108-10-1
OSHA PEL: 50 PPM/75 STEL
ACGIH TLV: 50 PPM/75 STEL; 9192
Other Recommended Limit: 50 PPM
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Proprietary: NO

Ingredient: N-BUTYL ACETATE (SARA III)

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Ingredient Sequence Number: 05
 Percent: <5
 Ingredient Action Code:
 Ingredient Focal Point: N
 NIOSH (RTECS) Number: AF7350000
 CAS Number: 123-86-4
 OSHA PEL: 150 PPM/200 STEL
 ACGIH TLV: 150 PPM/200STEL;9192
 Other Recommended Limit: 150 PPM
 -----
 Proprietary: NO
 Ingredient: AROMATIC 100; LEL:1.00; VAPOR PRESSURE:25.00
 Ingredient Sequence Number: 06
 Percent: <5
 Ingredient Action Code:
 Ingredient Focal Point: N
 NIOSH (RTECS) Number: 1003761AR
 CAS Number: N/K (FP N)
 OSHA PEL: N/K (FP N)
 ACGIH TLV: N/K (FP N)
 Other Recommended Limit: 200 PPM
 ______
 Proprietary: NO
 Ingredient: HEXAMETHYLENE DIISOCYANATE; LD50 ORAL:0.710GM/KG, VAPOR
 PRESSURE: 0.03.
 Ingredient Sequence Number: 07
Percent: <0.5
Ingredient Action Code:
Ingredient Focal Point: N
NIOSH (RTECS) Number: M01740000
CAS Number: 822-06-0
OSHA PEL: N/K (FP N)
ACGIH TLV: 0.005 PPM
Other Recommended Limit: 0.005
_____
Proprietary: NO
Ingredient: CHROMIUM ION (CR 3+)
Ingredient Sequence Number: 08
Percent: 5.19
Ingredient Action Code:
Ingredient Focal Point: N
NIOSH (RTECS) Number: GB6261000
CAS Number: 16065-83-1
OSHA PEL: 0.5 MG/M3 (CR)
ACGIH TLV: 0.5 MG/M3 (CR); 8990
Other Recommended Limit: N/K (FP N)
Physical/Chemical Characteristics
______
Appearance And Odor: N/K (FP N)
Boiling Point: 223-400F OR
Melting Point: N/K (FP N)
Vapor Pressure (MM Hg/70 F): N/K (FP N)
Vapor Density (Air=1): HV THN AIR
Specific Gravity: 1.32
Decomposition Temperature: N/K (FP N)
Evaporation Rate And Ref: SLOWER THAN ETHER
```

Solubility In Water: N/K (FP N) Percent Volatiles By Volume: 48 Viscosity: pH: N/K-FP Radioactivity: Form (Radioactive Matl): Magnetism (Milligauss): Corrosion Rate (IPY): N/K FP N Autoignition Temperature:

Fire and Explosion Hazard Data

Flash Point: 44F/6.67C Flash Point Method: TCC Lower Explosive Limit: N/K (FP N) Upper Explosive Limit: N/K (FP N) Extinguishing Media: USE NFPA CLASS B EXT(CO*2, DRY CHEM; /ALCOH FOAM) DSGN TO EXT NFPA CLASS B FIRE. POLYMER FOAM APPLI AT STP APPL RA (SUP DAT) Special Fire Fighting Proc: USE NIOSH/MSHA APPROVED SCBA & FULL PROT EQPT(FP N).WTR MAY BE INEFFEC BUT MAY BE USED TO COOL EXT CNTNR TO PVNT PRESS BUILD UP & POSS AUTO-IGN/EXPSR (SUP DAT) Unusual Fire And Expl Hazrds: KEEP CNTNR TIGHT CL. ISOL FROM HT; ELEC EQPT, SPK & OPEN FLAME.CL CNTNR MAY EXPLD WHEN EXP TO EXT HT. DO NOT APPLY TO VERY HOT SURF. SEE STORE, HAND; & OTHER PRECAUT. ______

Reactivity Data

______ Stability: YES

Cond To Avoid (Stability): AVOID FIRES AND HIGH TEMPERATURES.

Materials To Avoid: AVOID CONTACT WITH STRONG ACIDS OR ALKALINE MATERIALS.

Hazardous Decomp Products: CHROMATES AND OXIDES OF CARBON

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): DO NOT ADD DRIERS OR REACTIVE CHEMICALS WITHOUT TECHNICAL SUPERVISION

Health Hazard Data

______ LD50-LC50 Mixture: N/K (FP N)

Route Of Entry - Inhalation: N/K

Route Of Entry - Skin: N/K

Route Of Entry - Ingestion: N/K

Health Haz Acute And Chronic: SEE SIGNS AND SYMPTOMS OF OVEREXPOSURE

SECTION. (FP N).

Carcinogenicity - NTP: YES

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: ACGIH: NO.NTP: CHROMIUM AND CERTAIN CHROMIUM

COMPOUNDS ARE KNOWN TO BE CARCINOGENIC (FP N)

Signs/Symptoms Of Overexp: INHALATION: ANESTHETIC. IRRITATION OF NOSE; THROAT; EYES AND POSSIBLE DIZZINESS AND NAUSEA. THE EFFECTS OF CHRONIC EXPOSURE TO THIS PRODUCT HAVE NOT BEEN FULLY INVESTIGATED REPEATED HANDLING OR USE MAY PRESENT ADDITIONAL HAZARDS. EXERCISE DUE CARE.

Med Cond Aggravated By Exp: N/K (FP N)

Emergency/First Aid Proc: EYES:FLUSH IMMEDIATELY WITH LARGE AMOUNTS OF WATER FOR 15 MIN.INHAL: REMOVE FROM EXPOSURE. SUPPORT BREATHING (GIVE 0*2/ ARTIFICAL RESPIRATION) (FP N). SKIN: REMOVE CONTAMINATED CLOTHING AND WASH AFFECTED AREA WITH WATER. INGESTION: DO NOT INDUCE VOMITING.CONSULT A

PHYSICIAN IMMEDIATELY

Precautions for Safe Handling and Use

Stong If Wetl Delegand (G-11), Day 277 and an analysis and analysis and an ana

Steps If Matl Released/Spill: RMV ALL SCE OF IGN(FLAMES, HOTSURF, & ELEC; STATIC/FRICT SPARK). VENT AREA AND AVOID BREATHING VAPORS.RMV W/ INERT ABSORBENT AND NON-SPARKING TOOLS.STEPS MUST BE TAKEN TO PREVENT CONTAMINATION OF GROUND WATER OR STREAMS

Neutralizing Agent: N/K (FP N)

Waste Disposal Method: DISPOSE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. INCINERATE IN EPA APPROVED FACILITY. DO NOT INCINERATE CLOSED CONTAINERS.

Precautions-Handling/Storing: DO NOT STORE ABOVE 120F.ST LGE QTY IN COMPLI W/OSHA 1910.106.CNTNR SHOULD BE BONDED TO EACH OTHER AND PROPERLY GND WHEN POURING/TRANSFERING CONTENTS.

Other Precautions: DO NOT CUT OR WELD ON EMPTY CONTAINERS. DO NOT USE
UNTIL ALL SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD BY THE USER

Control Measures

Respiratory Protection: USE NIOSH APPR MECH RESP TO RMV OVSPRAY WHEN SPRAYING IN OUTDOOR/OPEN AREAS.IN RESTRIC VENT AREAS USE NIOSH APPROV CHEMMECH FILTERS DESIGN TO RMV SPRAY MIST & ORGAN VAPORS.USE NIOSH APPROVED SUPPLIED-AIR RESP/HOODS IN CONFINED AREAS.

Ventilation: PROV GEN DIL/LCL EXH VENT IN VOL & PATT TO KEEP CONC OF HAZ INGRED BELOW BOTH ACCEPT TLV & STATED LEL LIM.RMV (SUP DAT) Protective Gloves: SLVT IMPERM REQD FOR PRLON/REPEAT CONT.

Eye Protection: SAF EYWEAR DESIG TO PROT AGAIN SPLA LIQ.

Other Protective Equipment: USE PROTECTIVE EQUIPMENT TO PREVENT SKIN CONTACT.

Work Hygienic Practices: N/K (FP N)

Suppl. Safety & Health Data: BP:106.11-204.44C.PH:N.EXT MEDIA:TE IS PREF FOR LGE FIRES.SP FF PROC:WHEN EXP TO EXTM HEAT.IF WTR IS USED; FOG NOZ ARE PREF.RT OF ENTRY:FPN.VENT:DECOM PROD EHN WELD; BRZ/FLM CUT OBJ COAT W/THS PROD.VAPOR PROD WHL DRY/BAK THS PROD MST BE PROP VENT.ACCORD TO MFG:VOC LBS/GAL:3.5 & VOC GM/LT:417.

Transportation Data

Transportation Action Code:
Transportation Focal Point: N
Trans Data Review Date: 88011

DOT PSN Code: KFJ

DOT Proper Shipping Name: PAINT

DOT Class: FLAMMABLE LIQUID

DOT Label: FLAMMABLE LIQUID

Limited Quantity: N/R

DOT Mode Indicator:

Identification Number: UN1263

Reportable Qty - Trans File: N/R

DOT/DoD Exemption Number: N/R

IMO PSN Code: LCP

IMO Proper Shipping Name: PAINT OR PAINT RELATED MATERIAL

IMO Regulations Page Number: 3268

IMO UN Number: 1263

IMO UN Class: 3.2

IMO Subsidiary Risk Label: -

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IATA PSN Code: SXI
IATA UN ID Number: 1263
IATA Proper Shipping Name: PAINT
IATA UN Class: 3
IATA Subsidiary Risk Class:
IATA Label: FLAMMABLE LIQUID
AFR 71-4 PSN Code: HHJ
AFR 71-4 Prop. Shipping Name: PAINT
AFR 71-4 Class: FLAMMABLE LIQUID
AFR 71-4 Label: FLAMMABLE LIQUID
AFR 71-4 ID Number: UN1263
AF MMAC Code:
Tech Entry NOS Shipping Name:
Additional Trans Data:
Disposal Data
______
Disposal Data Action Code:
Disposal Data Focal Point: E
Disposal Data Review Date: 89345
Rec # For This Disp Entry: 02
Tot Disp Entries This Stock#: 002
Landfill Ban Item:
Disposal Supplemental Data: BP:106.11-204.44C.PH:N.EXT MEDIA:TE IS PREF
FOR LGE FIRES.SP FE PROC: WHEN EXP TO EXTM HEAT.IF WTR IS USED.FOG NO2 ARE
PREF.RT OF ENTRY: FPN. VENT: DECOM PROD WHN WELD; BRZ/FLM CUT OBJ COAT W/THS IN
CASE OF ACCIDENTAL EXPOSURE OR DISCHARGE, CONSULT HEALTH AND SAFETY FILE
FOR PRECAUTIONS.
1st EPA Haz Wst Code UnUsed: D001
1st EPA Haz Wst Name UnUsed: IGNITIBLE
1st EPA Haz Wst Char UnUsed: IGNITABILITY
1st EPA Acute Hazard UnUsed: NO
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
______
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: E
Common Name of Product:
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
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Contact Hazard-Moderate: Contact Hazard-Severe:

Fire Hazard-None:

Fire Hazard-Slight:

Fire Hazard-Moderate:

Fire Hazard-Severe:

Reactivity Hazard-None:

Reactivity Hazard-Slight:

Reactivity Hazard-Moderate:

Reactivity Hazard-Severe:

Special Hazard Precautions: MAY BE POISONOUS IF INHALED OR ABSORBED THROUGH SKIN. VAPORS MAY CAUSE DIZZINESS OR SUFFOCATION. CONTACT MAY IRRITATE OR BURN SKIN AND EYES. FIRE MAY PRODUCE IRRITATING OR POISONOUS GASES. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION.

Protect Eye:

Protect Skin:

Protect Respiratory:

Mfg's Name From Label: PRATT AND LAMBERT INC

Mfg's Street From Label: 16116 E 13TH ST

Mfg's P.O. Box From Label: 2153

Mfg's City From Label: WICHITA

Mfg's State From Label: KS

Mfg's Zip Code From Label: 67201

Mfg's Country From Label: US Emergency Ph. No. From Label:

Year Procured:

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992 FSC: 8010 NIIN: 012297544 Manufacturer's CAGE: 09225 Part No. Indicator: A Part Number/Trade Name: ALIPHATIC POLYISOCYANATE, 383 BROWN ZENTHANE ______ Nuclear Water Data ______ This is not a Nuclear Water Chemical NIIN. ______ General Information Item Name: POLYURETHANE COATING Manufacturer's Name: HENTZEN COATINGS, INC. Manufacturer's Street: 6937 WEST MILL ROAD Manufacturer's P. O. Box: 18642 Manufacturer's City: MILWAUKEE Manufacturer's State: WI Manufacturer's Country: US Manufacturer's Zip Code: 53218 Manufacturer's Emerg Ph #: 414-353-4200, DAY 800-424-9300, NITE Manufacturer's Info Ph #: 414-353-4200 Distributor/Vendor # 1: Distributor/Vendor # 1 Cage: Distributor/Vendor # 2: Distributor/Vendor # 2 Cage: Distributor/Vendor # 3: Distributor/Vendor # 3 Cage: Distributor/Vendor # 4: Distributor/Vendor # 4 Cage: Safety Data Action Code: Safety Focal Point: G Record No. For Safety Entry: 001 Tot Safety Entries This Stk#: 004 Status: SM Date MSDS Prepared: 06JAN89 Safety Data Review Date: 05MAY89 Supply Item Manager: GSA MSDS Preparer's Name: N/K Preparer's Company: Preparer's St Or P. O. Box: Preparer's City: Preparer's State: Preparer's Zip Code: Other MSDS Number: MSDS Serial Number: BGQZD Specification Number: MIL-C-53039(ME) Spec Type, Grade, Class: N/K Hazard Characteristic Code: F3

Unit Of Issue: GL

Type Of Container: CAN Net Unit Weight: 10.35 LBS

Unit Of Issue Container Qty: 1 GALLON

NRC/State License Number: N/K Net Explosive Weight: N/K Net Propellant Weight-Ammo: N/K Coast Guard Ammunition Code: N/K ______ Ingredients/Identity Information ______ Proprietary: NO Ingredient: METHYL ISOAMYL KETONE Ingredient Sequence Number: 01 Percent: 30-40 Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: MP3850000 CAS Number: 110-12-3 OSHA PEL: 50 PPM ACGIH TLV: 50 PPM; 9192 Other Recommended Limit: NONE ______ Proprietary: NO Ingredient: SILICA, AMORPHOUS, DUST Ingredient Sequence Number: 02 Percent: <.5 Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: VV7310000 CAS Number: 7631-86-9 OSHA PEL: 6 MG/M3 ACGIH TLV: 10 MG/M3; 8990 Other Recommended Limit: NONE -----Proprietary: NO Ingredient: SILICA, CRYSTALLINE - QUARTZ Ingredient Sequence Number: 03 Percent: 20-30 Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: VV7330000 CAS Number: 14808-60-7 OSHA PEL: 0.1 MG/M3 RDUST ACGIH TLV: 0.1 MG/M3 RDUST;9192 Other Recommended Limit: NONE ______ Proprietary: NO Ingredient: XYLENES (O-,M-,P- ISOMERS) (SARA III) Ingredient Sequence Number: 04 Percent: <1

Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: ZE2100000 CAS Number: 1330-20-7 OSHA PEL: 100 PPM/150 STEL ACGIH TLV: 100 PPM/150STEL;9192 Other Recommended Limit: NONE

Proprietary: NO

Ingredient: CHROMIUM (SARA III)

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Ingredient Sequence Number: 05
 Percent: 5-10
 Ingredient Action Code:
 Ingredient Focal Point: G
 NIOSH (RTECS) Number: GB4200000
 CAS Number: 7440-47-3
 OSHA PEL: 1 MG/M3
 ACGIH TLV: 0.5 MG/M3; 9192
 Other Recommended Limit: NONE
 -----
 Proprietary: NO
 Ingredient: AROMATIC 100
 Ingredient Sequence Number: 06
 Percent: 1-5
 Ingredient Action Code:
 Ingredient Focal Point: G
 NIOSH (RTECS) Number: 1002591PD
 CAS Number: 64742-95-6
 OSHA PEL: N/K
 ACGIH TLV: N/K
 Other Recommended Limit: 50PPM (MFR)
 -----
 Proprietary: NO
 Ingredient: N-BUTYL ACETATE (SARA III)
 Ingredient Sequence Number: 07
Percent: 1-5
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: AF7350000
CAS Number: 123-86-4
OSHA PEL: 150 PPM/200 STEL
ACGIH TLV: 150 PPM/200STEL;9192
Other Recommended Limit: NONE
Proprietary: NO
Ingredient: 1,6-DIISOCYANATOHEXANE (HEXAMETHYLENE DIISOCYANATE)
Ingredient Sequence Number: 08
Percent: 0.05
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: MO1740000
CAS Number: 822-06-0
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: 0.005 PPM; 9192
Other Recommended Limit: NONE
______
Proprietary: NO
Ingredient: HOMOPOLYMER OF HEXAMETHYLENE DIISOCYANATE
Ingredient Sequence Number: 09
Percent: 20-30
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: NQ9170000
CAS Number: 28182-81-2
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: 1MG/M*3(MFR)
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Proprietary: NO
 Ingredient: TITANIUM DIOXIDE
 Ingredient Sequence Number: 10
 Percent: <1
 Ingredient Action Code:
 Ingredient Focal Point: G
 NIOSH (RTECS) Number: XR2275000
 CAS Number: 13463-67-7
OSHA PEL: 10 MG/M3 TDUST
ACGIH TLV: 10 MG/M3 TDUST; 9192
Other Recommended Limit: NONE
Proprietary: NO
Ingredient: IRON OXIDE
Ingredient Sequence Number: 11
Percent: 1-5
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: NO7400000
CAS Number: 1309-37-1
OSHA PEL: 10 MG/M3 (FE)
ACGIH TLV: 5 MG/M3(FE), B2; 9192
Other Recommended Limit: NONE
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Proprietary: NO
Ingredient: POLYESTER RESIN
Ingredient Sequence Number: 12
Percent: 1-5
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: 1000554PR
CAS Number:
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE
Physical/Chemical Characteristics
Appearance And Odor: OPAQUE LIQUID, SOLVENT ODOR
Boiling Point: 244F-350F
Melting Point: N/K
Vapor Pressure (MM Hg/70 F): 8.00
Vapor Density (Air=1): >AIR
Specific Gravity: 1.24
Decomposition Temperature: N/K
Evaporation Rate And Ref: EQUAL TO BUTYL ACETATE
Solubility In Water: REACTS WITH WATER
Percent Volatiles By Volume: 51.3
Viscosity: N/K
pH: N/R
Radioactivity: N/K
Form (Radioactive Matl): N/K
Magnetism (Milligauss): N/K
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Corrosion Rate (IPY): N/K
Autoignition Temperature: N/K

Fire and Explosion Hazard Data

Flash Point: 60F(15.6C) Flash Point Method: TCC

Lower Explosive Limit: 1.0

Upper Explosive Limit: N/K

Extinguishing Media: FOAM, DRY CHEMICAL AND CO2

Special Fire Fighting Proc: FULL PROTECT EQUIP WITH SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN.DURING FIRE, IRRIT & HIGHLY TOXIC GASES & SMOKE ARE PRESENT FROM DECOMP/COMBUST PRODS.

Unusual Fire And Expl Hazrds: VAPORS WHEN HEAVIER THAN AIR.CAN TRAVEL A LONG DISTANCE ALONG GROUND AND FLASHBACK. CONTAINERS MAY EXPLODE IN HEAT OF FIRE.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): WATER CONTAMINATION

Materials To Avoid: WATER, ALCOHOLS, GLYCOL ETHERS, AMINES.

Hazardous Decomp Products: BY FIRE: CO2, CO, OXIDES OF NITROGEN, TRACES OF HYDROGEN CYANIDE, HEXAMETHYLENE DIISOCYANATE.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NONE

Health Hazard Data

LD50-LC50 Mixture: N/K

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: CHRONIC OVEREXPOSURE TO ISOCYANATE CONTAIN PRODUCTS MAY LEAD TO RESPIR SENSITIZATION CHARACTERIZED BY ASTHMA-LIKE SYMP & OR SKIN SENSITIZATION CHARACTERIZED BY ALLERGIC DERMATITIS(RASH, ITCH, HIVES, SWELLING, ETC). REPORTS HAVE ASSOCIATED REPEATED & PROLONGED OVEREXPOSURE TO SOLVENTS WITH PERM BRAIN & NERVOUS SYSTEM DAMAGE.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: N/R

Signs/Symptoms Of Overexp: IRRITATION TO SKIN, EYES & RESPIRATORY TRACT (NOSE, THROAT, LUNGS).SYMPTOMS MAY BE WATERING EYES, DRYNESS OF THROAT, COUGHING, HEADACHE, TIGHTNESS IN CHEST OR BURNING SENSATION.HEADACHE, DIZZINESS OR NAUSEA MAY BE EXPERIENCED BY SOME AS A RESULT OF EXPOSURE TO SOLVENTS.

Med Cond Aggravated By Exp: ASTHMA AND OTHER RESPIRATORY AILMENTS; CHEMICAL SENSITIZATION.

Emergency/First Aid Proc: VAPORS: REMOVE FROM EXPOSURE.RESTORE BREATHING.KEEP WARM & QUIET.NOTIFY A PHYSICIAN.EYES: FLUSH IMMED WITH LARGE AMTS OF RUNNING WATER FOR AT LEAST 15 MIN.TAKE TO A PHYSICIAN FOR MEDICAL TREATMENT.SKIN: WASH AFFECTED AREA WITH SOAP & WATER.REMOVE CONTAMINATED CLOTHING.CONSULT A PHYSICIAN.INGESTION: IF SWALLOWED, CALL A PHYSICIAN IMMEDIATELY!!!

______ Precautions for Safe Handling and Use

_______ Steps If Matl Released/Spill: EVAC NON-ESSENTIAL PERSONNEL.REMOVE ALL SOURCES OF IGNITION. VENTILATE AREA. AVOID BREATH VAPORS. COVER SPILL WITH INERT ABSORB. POUR LIQUID DECONTAM OVER SPILL-LET STAND 10 MIN-COLLECT MATERIAL. WASH DOWN AREA WITH DECONTAM & FLUSH SPILL AREA WITH WATER. Neutralizing Agent: 0-10% AMM.HYDROXIDE, 2-5% DETERGNT & BALANCE WATER, OR A SOLN OF (SEE OTHER PRECAU)

Waste Disposal Method: DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL ENVIRONMENTAL CONTROL REGULATIONS. DECONTAMINATE CONTAINERS PRIOR TO DISPOSAL.

Precautions-Handling/Storing: DO NOT STORE ABOVE 120F OR BELOW 32F.STORE LARGE QUANTITIES IN BUILDINGS DESIGNED TO COMPLY WITH OSHA 1910.106. Other Precautions: (NEUTRALIZING) UNION CARBIDE'S TERGITOL TMN-10(20%) & WATER(80%).DO NOT TAKE INTERNALLY.GROUND CONTAINER WHEN POURING.AVOID FREE FALL OF LIQUID IN EXCESS OF FEW INCHES.USE WITH ADEQUATE VENTILATION & RESPIRATORY EQUIPMENT.

Control Measures

Respiratory Protection: AIRLINE RESPIRATORS UNLESS AIR SAMPLING SHOWS EXPOSURE TO BE BELOW OSHA LIMITS. THEN, EITHER CHEMICAL CARTRIDGE RESPIRATORS OR AIRLINE RESPIRATORS ARE REQUIRED.USE SAME PRECAUTIONS DURING MIXING OR WHERE PAINT FUMES WOULD BE PRESENT.

Ventilation: GENERAL DILUTION/LOCAL EXHAUST VENTILATION TO KEEP AIR CONTAMINANT BELOW CURRENT (SEE SUPPLEMENTAL DATA).

Protective Gloves: CHEMICAL RESISTANT GLOVES

Eye Protection: EYEWEAR W/SPLASH GUARDS OR SIDE SHIELDS

Other Protective Equipment: WEAR PROTECTIVE CLOTHING TO KEEP SKIN CONTACT AT A MINIMUM

Work Hygienic Practices: WASH HANDS AND ANY EXPOSED SKIN THOROUGHLY BEFORE EATING OR SMOKING. SMOKE IN SMOKING AREAS ONLY.

Suppl. Safety & Health Data: APPLICABLE OSHA SAFETY AND HEALTH REQUIREMENTS IN MIXING, APPLICATION AND CURING AREAS; AND TO REMOVE DECOMPOSITION PRODUCTS DURING WELDING AND FLAME CUTTING ON SURFACES COATED WITH THIS PRODUCT. ______

Transportation Data

______ Transportation Action Code: Transportation Focal Point: G Trans Data Review Date:

DOT PSN Code: KFJ

DOT Proper Shipping Name: PAINT

DOT Class: FLAMMABLE LIQUID

DOT Label: FLAMMABLE LIQUID

Limited Quantity: NO

DOT Mode Indicator:

Identification Number: UN1263

Reportable Qty - Trans File: NO

DOT/DoD Exemption Number: NONE

IMO PSN Code: LCP

IMO Proper Shipping Name: PAINT OR PAINT RELATED MATERIAL

IMO Regulations Page Number: 3268

IMO UN Number: 1263 IMO UN Class: 3.2

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IMO Subsidiary Risk Label: -
IATA PSN Code: SXN
IATA UN ID Number: 1263
IATA Proper Shipping Name: PAINT
IATA UN Class: 3
IATA Subsidiary Risk Class:
IATA Label: FLAMMABLE LIQUID
AFR 71-4 PSN Code: HHJ
AFR 71-4 Prop. Shipping Name: PAINT
AFR 71-4 Class: FLAMMABLE LIQUID
AFR 71-4 Label: FLAMMABLE LIQUID
AFR 71-4 ID Number: UN1263
AF MMAC Code: NK
Tech Entry NOS Shipping Name: N/K
Additional Trans Data: NONE
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                           Disposal Data
______
Disposal Data Action Code:
Disposal Data Focal Point: E
                                                               ١,
Disposal Data Review Date: 89348
Rec # For This Disp Entry: 01
Tot Disp Entries This Stock#: 002
Landfill Ban Item:
Disposal Supplemental Data: 3APPLICABLE OSHA SAFETY AND HEALTH
REQUIREMENTS IN MIXING, APPLICATION AND CURING AREAS; AND TO REMOVE
DECOMPOSITION PRODUCTS DURING WELDING AND FLAME CUTTING ON SURFACES COATED
WITH THIS PRODIN CASE OF ACCIDENTAL EXPOSURE OR DISCHARGE, CONSULT HEALTH
AND SAFETY FILE FOR PRECAUTIONS.
1st EPA Haz Wst Code UnUsed: D001
1st EPA Haz Wst Name UnUsed: IGNITIBLE
1st EPA Haz Wst Char UnUsed: IGNITABILITY
1st EPA Acute Hazard UnUsed: NO
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
______
                           Label Data
______
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: E
Common Name of Product:
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
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Contact Hazard-Slight: Contact Hazard-Moderate: Contact Hazard-Severe: Fire Hazard-None: Fire Hazard-Slight: Fire Hazard-Moderate: Fire Hazard-Severe: Reactivity Hazard-None: Reactivity Hazard-Slight: Reactivity Hazard-Moderate: Reactivity Hazard-Severe:

Special Hazard Precautions: MAY BE POISONOUS IF INHALED OR ABSORBED THROUGH SKIN. VAPORS MAY CAUSE DIZZINESS OR SUFFOCATION. CONTACT MAY IRRITATE OR BURN SKIN AND EYES. FIRE MAY PRODUCE IRRITATING OR POISONOUS GASES. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION. Protect Eye:

Protect Skin:

Protect Respiratory:

Mfg's Name From Label: HENTZEN COATINGS INC Mfg's Street From Label: 6937 W MILL ROAD

Mfg's P.O. Box From Label:

Mfg's City From Label: MILWAUKEE

Mfg's State From Label: WI

Mfg's Zip Code From Label: 53218-1225

Mfg's Country From Label: US Emergency Ph. No. From Label:

Year Procured:

September 19

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IMO Subsidiary Risk Label: -
 IATA PSN Code: SXN
 IATA UN ID Number: 1263
 IATA Proper Shipping Name: PAINT
 IATA UN Class: 3
 IATA Subsidiary Risk Class:
 IATA Label: FLAMMABLE LIQUID
AFR 71-4 PSN Code: HHJ
AFR 71-4 Prop. Shipping Name: PAINT
AFR 71-4 Class: FLAMMABLE LIQUID
AFR 71-4 Label: FLAMMABLE LIQUID
AFR 71-4 ID Number: UN1263
AF MMAC Code: NK
Tech Entry NOS Shipping Name: N/K
Additional Trans Data: NONE
______
                          Disposal Data
Disposal Data Action Code:
Disposal Data Focal Point: E
Disposal Data Review Date: 89348
Rec # For This Disp Entry: 01
Tot Disp Entries This Stock#: 002
Landfill Ban Item:
Disposal Supplemental Data: 3APPLICABLE OSHA SAFETY AND HEALTH
REQUIREMENTS IN MIXING, APPLICATION AND CURING AREAS; AND TO REMOVE
DECOMPOSITION PRODUCTS DURING WELDING AND FLAME CUTTING ON SURFACES COATED
WITH THIS PRODIN CASE OF ACCIDENTAL EXPOSURE OR DISCHARGE, CONSULT HEALTH
AND SAFETY FILE FOR PRECAUTIONS.
1st EPA Haz Wst Code UnUsed: D001
1st EPA Haz Wst Name UnUsed: IGNITIBLE
1st EPA Haz Wst Char UnUsed: IGNITABILITY
1st EPA Acute Hazard UnUsed: NO
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
_______
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: E
Common Name of Product:
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
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Contact Hazard-Slight: Contact Hazard-Moderate: Contact Hazard-Severe: Fire Hazard-None: Fire Hazard-Slight: Fire Hazard-Moderate: Fire Hazard-Severe: Reactivity Hazard-None: Reactivity Hazard-Slight: Reactivity Hazard-Moderate: Reactivity Hazard-Severe: Special Hazard Precautions: MAY BE POISONOUS IF INHALED OR ABSORBED THROUGH SKIN. VAPORS MAY CAUSE DIZZINESS OR SUFFOCATION. CONTACT MAY IRRITATE OR BURN SKIN AND EYES. FIRE MAY PRODUCE IRRITATING OR POISONOUS GASES. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION. Protect Eye: Protect Skin: Protect Respiratory: Mfg's Street From Label: 6937 W MILL ROAD

Mfg's Name From Label: HENTZEN COATINGS INC

Mfg's P.O. Box From Label:

Mfg's City From Label: MILWAUKEE

Mfg's State From Label: WI

Mfg's Zip Code From Label: 53218-1225

Mfg's Country From Label: US Emergency Ph. No. From Label:

Year Procured:

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DOD Hazardous Materials Information System DOD 6050.5-L

AS OF November 1992

FSC: 8010

NIIN: 012763639

Manufacturer's CAGE: 61196

Part No. Indicator: A

Part Number/Trade Name: COAT'G POLYUR 1 COMP TAN 686 33446 ID705130

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: CHEMICAL COATING AGENT RESISTANT TAN 686

Manufacturer's Name: PRATT & LAMBERT, INC.

Manufacturer's Street: 16116 E 13TH ST

Manufacturer's P. O. Box: 2153

Manufacturer's City: WICHITA

Manufacturer's State: KS

Manufacturer's Country: US

Manufacturer's Zip Code: 67201

Manufacturer's Emerg Ph #:

Manufacturer's Info Ph #:

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: G

Record No. For Safety Entry: 003

Tot Safety Entries This Stk#: 003

Status:

Date MSDS Prepared: 13DEC88

Safety Data Review Date: 240CT89

Supply Item Manager: GSA

MSDS Preparer's Name: W.A. ELLISON

Preparer's Company: PRATT & LAMBERT, INC.

Preparer's St Or P. O. Box: 2153

Preparer's City: WICHITA

Preparer's State: KS

Preparer's Zip Code: 67201

Other MSDS Number:

MSDS Serial Number: BHFHZ

Specification Number: MIL-C-53039 AM1

Spec Type, Grade, Class: NK

Hazard Characteristic Code:

Unit Of Issue: GL

Unit Of Issue Container Qty: 1 GL CN

Type Of Container: METAL Net Unit Weight: 10.5 LB

B 813 = 61.5 6a1 B 360 = 165 Gal

78.0 Gal

(78)(10.5) = 819.00 lbs

methyl IsoButyl = (819)(.15)= 122.85/6s (15%) Ke Tone

Xy Lene 25% (819) (105)= 40.9516s

Toluene 5% (819) (.05)= 40.95/bs

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160 A. C. A. C.

NRC/State License Number: NK Net Explosive Weight: NK Net Propellant Weight-Ammo: NK Coast Guard Ammunition Code: NK Ingredients/Identity Information ______ Proprietary: NO Ingredient: XYLENES (O-,M-,P- ISOMERS) (SARA III) Ingredient Sequence Number: 01 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: ZE2100000 CAS Number: 1330-20-7 OSHA PEL: 100 PPM/150 STEL ACGIH TLV: 100 PPM/150STEL;9192 Other Recommended Limit: NK ______ Proprietary: NO Ingredient: ETHYL BENZENE (SARA III) Ingredient Sequence Number: 02 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: DA0700000 CAS Number: 100-41-4 OSHA PEL: 100 PPM/125 STEL ACGIH TLV: 100 PPM/125STEL 9192 Other Recommended Limit: NK -----Proprietary: NO Ingredient: SILICA, CRYSTALLINE - CRISTOBALITE Ingredient Sequence Number: 03 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: VV7325000 CAS Number: 14464-46-1 OSHA PEL: 0.05 MG/M3 RDUST ACGIH TLV: 0.05 MG/M3 RDUST9192 Other Recommended Limit: NK -----Proprietary: NO Ingredient: N-BUTYL ACETATE (SARA III) Ingredient Sequence Number: 04 Percent: NK Ingredient Action Code:

Ingredient Focal Point: G

NIOSH (RTECS) Number: AF7350000

CAS Number: 123-86-4

OSHA PEL: 150 PPM/200 STEL ACGIH TLV: 150 PPM/200STEL;9192 Other Recommended Limit: NK

Proprietary: NO

Ingredient: TITANIUM DIOXIDE

Ingredient Sequence Number: 05 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: XR2275000 CAS Number: 13463-67-7 OSHA PEL: 10 MG/M3 TDUST ACGIH TLV: 10 MG/M3 TDUST; 9192 Other Recommended Limit: NK Proprietary: NO Ingredient: SILICA, CRYSTALLINE - QUARTZ Ingredient Sequence Number: 06 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: VV7330000 CAS Number: 14808-60-7 OSHA PEL: 0.1 MG/M3 RDUST ACGIH TLV: 0.1 MG/M3 RDUST;9192 Other Recommended Limit: NK ------Proprietary: NO Ingredient: SILICA, AMORPHOUS, DIATOMACEOUS EARTH, CONTAINING LESS THAN 1% CRYSTALLINE SILICA Ingredient Sequence Number: 07 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: HL8600000 CAS Number: 61790-53-2 OSHA PEL: 6 MG/M3 ACGIH TLV: 10 MG/M3 TDUST; 9192 Other Recommended Limit: NK -----Proprietary: NO Ingredient: SILICA, CRYSTALLINE - QUARTZ Ingredient Sequence Number: 08 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: VV7330000 CAS Number: 14808-60-7 OSHA PEL: 0.1 MG/M3 RDUST ACGIH TLV: 0.1 MG/M3 RDUST;9192 Other Recommended Limit: NK -----Proprietary: NO Ingredient: METHYL ISOBUTYL KETONE (SARA III) Ingredient Sequence Number: 09 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: SA9275000 CAS Number: 108-10-1 OSHA PEL: 50 PPM/75 STEL

7 .

ACGIH TLV: 50 PPM/75 STEL; 9192

to the second second

```
Other Recommended Limit: NK
 ______
 Proprietary: NO
 Ingredient: POLYMERIC HEXAMETH-YLENE DIISOCYANATE
 Ingredient Sequence Number: 10
 Percent: NK
 Ingredient Action Code:
 Ingredient Focal Point: G
 NIOSH (RTECS) Number: NQ9170000
 CAS Number: 28182-81-2
 OSHA PEL: NK
 ACGIH TLV: NK
 Other Recommended Limit: NK
 -----
 Proprietary: NO
 Ingredient: AROMATIC HYDROCARBON
 Ingredient Sequence Number: 11
 Percent: NK
 Ingredient Action Code:
 Ingredient Focal Point: G
NIOSH (RTECS) Number: 1000007AH
CAS Number: 64741-67-9
OSHA PEL: NK
ACGIH TLV: NK
Other Recommended Limit: NK
-----
Proprietary: NO
Ingredient: 1,6-DIISOCYANATOHEXANE (HEXAMETHYLENE DIISOCYANATE)
Ingredient Sequence Number: 12
Percent: NK
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: MO1740000
CAS Number: 822-06-0
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: 0.005 PPM; 9192
Other Recommended Limit: NK
-----
Proprietary: NO
Ingredient: VOC. ORGANIC CMPD 3.5 LB/GL LESS WATER & NPRS* 420 G/L LESS
WATER VOC 6.7 LB/GAL SOLIDS 804 G/L SOLIDS CALCULATED.
Ingredient Sequence Number: 13
Percent: NK
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: 9999999VO
CAS Number: NR
OSHA PEL: NK
ACGIH TLV: NK
Other Recommended Limit: NK
______
                 Physical/Chemical Characteristics
```

Appearance And Odor: NK Boiling Point: 210F 475F

Melting Point: NK

Vapor Pressure (MM Hg/70 F): NK

Vapor Density (Air=1): >AIR

Specific Gravity: NK

Decomposition Temperature: NK

Evaporation Rate And Ref: SLOWER THAN ETHER.

Solubility In Water: NK

Percent Volatiles By Volume: 48

Viscosity: NK

pH: NK

Radioactivity: NK

Form (Radioactive Matl): NK

Magnetism (Milligauss): NK

Corrosion Rate (IPY): NK

Autoignition Temperature: NK

Fire and Explosion Hazard Data

Flash Point: 59F 15.00C Flash Point Method: CALCU

Lower Explosive Limit: NK

Upper Explosive Limit: NK

Extinguishing Media: USE NFPA CLASS B FIRE EXTINGUISHERS. POLYMER FOAM IS PREFERRED FOR LARGE FIRES.

Special Fire Fighting Proc: WEAR SELF-CONTAINED BREATHING APPARATUS. WATER TO COOL CONT TO PREVENT POSSIBLE AUTO-IGNITION OR EXPLOSION. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE.

Unusual Fire And Expl Hazrds: OVEREXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD. SYMPTOMS MAY NOT BE IMMEDIATELY APPARENT. GET MED ATTN. WARNING! FLAMMABLE.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): AVOID EXCESSIVE HEAT AND SOURCES OF IGNITION. Materials To Avoid: STRONG ACIDS OR ALKALINE MATERIALS. OXIDIZING MATERIALS.

Hazardous Decomp Products: BURNING, INCLUD WHEN HEATED BY WELDING/CUTTING, WILL PRODUCESMOKE/CARBON MONOXIDE-DIOXIDE/NITROGEN OXIDES. HYDROGEN GAS.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): KEEP AWAY FROM HEAT, SPARKS AND FLAME.

Health Hazard Data

LD50-LC50 Mixture: NK

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: SWALLOWING: CAN CAUSE GASTROINTESTINAL IRRY NAUSEA/VOMIT. ASPIRATION OF MAT'L MAYCAUSE CHEM PNEUMONITIS. INHALATION: NOSE/THROAT/LUNG IRR/DAMAGE. HIGH CONCEN MAYCAUSE CENTRAL NERVOUS SYS DEPRESSION CHAR BY HEADACHES/DIZZINESS/NAUSEA/CONFU- SION. EYE: MAY CAUSE EYE IRR. SKIN: MAY CAUSE DEFATTING/IRRITA/SENSITIZATION.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: YES

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: IARC-CRYSTALLINE SILICA LMTED EVI CARCINOGENICITY IN HUMANS.TITANIUM DIOXIDE NOT POTENT CARCINOGEN-NTP, IARC,

OSHA, ACGIH.

Signs/Symptoms Of Overexp: REPEATED EXPOSURE TO CRYSTALLINE SILICA MAY CAUSE PNEUMOCONIOSIS. REPEATED EXPO-SURE TO DIISOCYANATES MAY RESULT IN RESPIRATORY SENSITIZATION IN SOME INDIVID. OVEREXPOSURE TO SOLVENTS ASSO W/PERM BRAIN/NERVOUS SYSTEM DAMAGE. INTENTIONAL MISUSE BY CONCENTRATING AND INHALING CONTENTS MAY BE HARMFUL OR FATAL.

Med Cond Aggravated By Exp: PREEXISTING RESPIRATORY CONDITIONS MAY BE AGGRA- VATED BY EXPOSURE TO CRYSTALLINE SILICA.

Emergency/First Aid Proc: SWALLOWING: DO NOT INDUCE VOMITING/GET MED ATTN. INHALATION: REMOVE TO FRESH AIRIF BREATHING HAS STOPPED GIVE CPR. GET MED ATTN. EYE: FLUSH W/WATER FOR 15 MIN LIFTING UPPER/LOWER LIDS. GET MED ATTN. SKIN: REMOVE CONTAMINATED CLOTHING. WASH AFFECTED AREA. OBTAIN MED ATTN IF IRR'N PERSISTS. TREATMENT REQ FOR OVER- EXPOSURE S/B DIRECTED AT THE CONTROL OF SYMPTOMS AND THE CLINICAL CONDITIONS.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: ELIM ALL IGNITION SOURCES. DIKE/CONTAIN
SPILL WITHINERT MAT'L. TRANSFER LIQ'S/ABSORBENT DIKING MAT'LIN COVERED
METAL CONT'S FOR RECOVERY/DISPOSAL. USEONLY NON-SPARKING TOOLS. PREVENT
CONTAM OF SEWERS/STREAMS/GROUNDWATER W/SPILLED MAT'L/USED ABSORBENT
Neutralizing Agent: NK

Waste Disposal Method: INCINERATE ONLY IN EPA PERMITTED FACILITY.
DISPOSEONLY IAW FED/STATE/LOCAL REGS. DO NOT INCINERATE CLOSED CONTAINERS.
OBSERVE PRECAUTIONS FOR DIS- POSAL OF FLAMMABLE MAT'S. CONTAMINATED
ABSORBENT MAY BE DISPOSED IN A HAZARDOUS WASTE LANDFILL.

Precautions-Handling/Storing: DO NOT STORE ABOVE 95 DEGREES F. STORE LARGE QUANTITIES IN COMPLIANCE WITH OSHA 29CFR1910.106.

Other Precautions: DO NOT BREATHE SANDING DUST OR REUSE EMPTY CONT. DO NOT TAKE INTERN. CONT'ER S/BGROUNDED AND BONDED TO THE RECEIVING CONTAINER. DO NOT WELD/BRAZE OR CUT CONT'R.NEVER USE PRESS TO EMP. CLOSE AFTER EA USE. DO NOT USE IF REACT TO ISOCYANATES.

Control Measures

Respiratory Protection: USE POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR (TC 19C NIOSH/MSHA). IF NOT AVAIL-ABLE, USE A VAPOR PARTICULATE, (PAINT SPRAY) RESPIRATOR THAT MANUFACTURER RECOM UNTIL ISOCYANATE VAPORS AND MISTS ARE GONE DURING MIXING OR SPRAYING.

Ventilation: PROVIDE DILUTION/LOCAL EXHAUST VENTILATION TO KEEP CONCENTRATIONS OF HAZARDOUS INGRID BELOW EXPOSURE LIMITS STATED.

Protective Gloves: SOLVENT IMPERMEABLE GLOVES.

Eye Protection: WEAR SAFETY SPECTA/CHEM SPLASH GOGGLES.

Other Protective Equipment: AS REQUIRED TO PREVENT SKIN CONTACT.

Work Hygienic Practices: WASH WITH SOAP WATER HANDS/FACE THROUGHLY BEFORE EATING OR DRINKING.

Suppl. Safety & Health Data: NK

Transportation Data

Transportation Action Code:

Transportation Focal Point: G Trans Data Review Date: 89297

DOT PSN Code: KFV

DOT Proper Shipping Name: PAINT RELATED MATERIAL

DOT Class: FLAMMABLE LIQUID DOT Label: FLAMMABLE LIQUID

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Limited Quantity: NO
 DOT Mode Indicator:
 Identification Number: UN1263
 Reportable Qty - Trans File: NO
 DOT/DoD Exemption Number: NK
 IMO PSN Code: LCP
 IMO Proper Shipping Name: PAINT OR PAINT RELATED MATERIAL
 IMO Regulations Page Number: 3268
 IMO UN Number: 1263
 IMO UN Class: 3.2
 IMO Subsidiary Risk Label: -
 IATA PSN Code: SXI
IATA UN ID Number: 1263
IATA Proper Shipping Name: PAINT
IATA UN Class: 3
IATA Subsidiary Risk Class:
IATA Label: FLAMMABLE LIQUID
AFR 71-4 PSN Code: HGI
AFR 71-4 Prop. Shipping Name: PAINT RELATED MATERIAL
AFR 71-4 Class: FLAMMABLE LIQUID
AFR 71-4 Label: FLAMMABLE LIQUID
AFR 71-4 ID Number: NA1263
AF MMAC Code: NK
Tech Entry NOS Shipping Name: NK
Additional Trans Data: NK
Disposal Data
______
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
______
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: E
Common Name of Product:
```

Chronic Hazard:

DM .[m] mil O-beg [1]

```
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: MAY BE POISONOUS IF INHALED OR ABSORBED
THROUGH SKIN. VAPORS MAY CAUSE DIZZINESS OR SUFFOCATION. CONTACT MAY
IRRITATE OR BURN SKIN AND EYES. FIRE MAY PRODUCE IRRITATING OR POISONOUS
GASES. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION.
Protect Eye:
Protect Skin:
Protect Respiratory:
Mfg's Name From Label: PRATT AND LAMBERT INC
Mfg's Street From Label: 16116 E 13TH ST
Mfg's P.O. Box From Label: 2153
Mfg's City From Label: WICHITA
Mfg's State From Label: KS
Mfg's Zip Code From Label: 67201
Mfg's Country From Label: US
Emergency Ph. No. From Label:
Year Procured:
```

Wear respirators, eye, hand, and body protection appropriate for the size of the spill and the exposures encountered.

Keep spectators away. Eliminate all ignition sources (flames, hot surfaces, and sources of electrical, static or frictional sparks). Dite and contain spill with inert material (e.g. sand, earth). Transfer liquids to covered metal containers for recovery or disposal, or remove with inert absorbent. Use only non-sparking tools. Place absorbent dising materials in covered metal containers for disposal. Prevent contamination of severs, streams, and groundwater with spilled material or used absorbent.

MASTE DISPOSAL

Dispose in accordance with federal, state and local regulations. RDRA CLASSIFICATION

restriction.
This product contains chromium. Waste residue of this product may qualify This product contains chromium. Waste residue of this product may qualify as hezardous waste (40 CFR Part 261.74- Characteristic of EP Tozicity). This product, if discarded directly, would be classified a hezardous waste based on its ignitability characteristic, i.e. has a flash point of 140 deg C: or less. The proper RCRA classification would be DOOL. ENTROWEMTAL MOACUS

None wwn SECTION 17 - PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION

RESPIRATORY POLICETION

Wear in appropriate properly fitted positive pressure air supplied respirator (TC 190 NICSH/MSHA) while exposed. If not evaluate, use a vepor particulate, ipaint spray! respirator that respirator manufacturer recommends as effective for isocyanate vapors and mists. Mear the respirator for the whole Size while mixing, apraying and untill vapors and mists are gone. Fellow respirator manufacturer's directions for use.

Use positive pressure, air-supplied respirator, NIOSH schedule TC19C. Refer to OSHA 29 CFR 1926. 134 " Respiratory Protection".

WENIGATION

Provide annual dilution and all the content of the

Provide general dilution and local exhaust ventilation in sufficient volume Section II below the lowest exposure limit stated. Remove decomposition products that are generated when welding, cutting, or brazing objects costed with this product. Refer to "Industrial Vantilation - A Manual of Recommended Practice " ACOIM . HAND PROTECTION

Hear appropriate toperacable gloves.

Hear wafety systecles end chamical splesh goggles (ANSI Z87.1 or equilavent).

OTHER PROTECTIVE SAMPHEN

Eyewash facility, safety shower.
As required to prevent skin contact

SECTION X - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKE! IN HAMBLING AND STURMED

Do not store above 115 dep.f (46 deg.C) store large quantities in compliance with OSHA 29CFR1910.106.

DINER MEDIATIONS

Do not take internally. Close container after each use.

Do not take internally. Close container after each use.

Do not breathe sending dust.

This product should not be used by persons who have had chronic (long term) breathing problems or reactions to ispaymenter. Do not breath vapor spray or mist. Do not get in eyes on sim. or clothing. Mash thoroughly after handling. Keep away from heat sparks or flame. Use only with adequate windlation.

Empty containers about be washed and re-used for any purpose.

Containers about be grounded and bonded to the receiving container.

Do not used breas or it on empty container.

Section XI - DIMER INFORMATION

HISGELPTES DECRNATION

SECTION XXI - TRANSPORTATION DATA

		DUL	000	and a		
LIMITE	D QUE	PELLENT PERCHANE	NO	LE) PAINT APPLICABLE	UB1263 MARIME POLLUTANT CLASS LABEL PLACARO	no 3 Plangable Plangable

EMERGENCY ACCIDENT FRECAUTIONS AND PROCEDURES SEE ERG \$26

Tay Tay

UNIT CONTAINER	D.O.T.	U.M.
	211	1A2
	21/	13.2
	214	132
	178	121
onit Contains 1 Pint Netal 1 Quart Netal 1 Gallon Metal 5 Gallon Metal 55 Gallon Metal	17C	2.3.2
55 Gallon Motal	178	1.3.1
DO GULLOU ENGUN	17C	1A2
with and are all these	120	40

THIS IS TO CERTIFY THAT THIS ITEM IS HAZARDOUS AND IMPORMATION STATED IS, TO THE BEST OF MY KNOWLEDGE, CORRECT.

W.A. ELLISON OPERATIONS MANAGER

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. WHILE THE IMPORMATION IS BELIEVED TO BE RELIABLE, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THIREOF, SINCE THE USE OF THIS IMPORMATION AND THE COMDITIONS AND USE OF THIS FRODUCT TARE CONTROLLED BY THE USER, IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFE USE OF THE PRODUCT.

The Corporate Safety and Environmental Affairs Department is responsible for the preparation of this Material Safety Data Sheet.

CARC TAN 6860A

Pratt & Lambert, Inc. Industrial Coatings Div P. O. Box 2153 Wichita, KS 67201 ENERGENCY PHONE NO. 716-873-6000(7days, 24hrs) INFORMATION PHONE NO. 316-733-1361(M-F Ban-5Pm CT) BOT EMERGENCY (800)255-3924 (24hrs)

HEALTH FLAMMABILITY 3 REACTIVITY These ratings should be used only as Part of fully imPlemented

H. M. I. S. Program.

MATERIAL SAFETY DATA SHEET

SECTION T

	SECTION 1									
	MANUFACTURER CODE	ATING. A I.D. 70	LIPH. POL				REVI MIL-C-53		11/01/ AM-2	/93
	FSN 8010-01-276-36 MANUFACTURER CAGE			INER 01 P			11-1/2 X 14 GR	OSS NT:	46#	
			SECT			-	INCREDIENTS			
					1110011	Marie	ALLOHABLE		SARA I	P
	INGREDIENT	% BY	CAS NO.				EXFOSURE LEVEL		313 NH	H9 6
		PROT	/NIOSHW		PPH	NG/CU. N	1. MPPCF	SKIN	20 1	DEG. C
X	METHYL ISOBUTYL	15	108-10-1 8A9275000		50	205		i de la contraction de la cont	X 16	
	NE TONE	SOCACHI	9H762 3000	OSHA-PEL		300 410				
				OSHA-STE		300				
	SOLVENT NAPTHA, HEAVY	5	64742-94-5		O UFL	6.0 LISHED				
	AROMATIC	SOLVENT			02235	Markey -				
	N-BUTYL ACETATE	SDI UENT	123-86-4 AF7350000		150 200	710 950			10	
		SOLVEIVE	111 7 000000	OSHA-PEL	150	710				
				OSHA-STEL	7.5-2	950				
Y	XYLENE	(5	1330-20-7		7 UFL 100	7.6 435			X 5	
/				TLV-STEL	150	655			X 3	
	9			OSHA-PEL	100	435				
				USHA-STEL		655 7. 0				
X	TOLUENE	5	108-88-3	TLV-THA	50	147		SKIN	X 22	
0.35		SOLVENT	XS5250000		100	375				
				USHA-STEL		560 7.1				
	SILICA, CRYSTALLINE-		14808-60-7	TLV-THA		0. 1000				
	GUARTZ SILICA, CRYSTALLINE-		VV7330000			0. 1000				
	CRISTOBALITE	10 PIGHENT	14464-46-1	OSHA-PEL		0.0500				
	SILICA, AMORPHOUS-	5	68855-54-9		,	10				
	DIATONACEOUS EARTH SILICA, CRYSTALLINE	PIGHENT	and the second s	OSNA-PEL		6	20			
	SILION DRISHMLLING	-	14808-60-7 VV7330000			0. 1000				
	TITANIUM DIOXIDE	10	13463-67-7	TLV-THA		10				
	ISOPHORONE	PIGHENT 5	XR2275000	Company of the second	A AAFA	10				
	DIISOCYANATE	RESIN	4098-71-9	OSHA-PEL	0.0050			SKIN	1	
	DIBUTYL TIN	(1	77-58-7	TLU-THA		0. 1000		SKIN		
	DILAURATE	ADDITIV		OSHA-PEL	(0. 1000				
	POLYMERIC HEXAMETH- YLENE DIISOCYANATE	25 RESIN	28182-81-2 (MFR		1				
-			64742-95-6	NON	NE ESTABL	ISHED				
	LIGHT AROMATIC	SOLVENT								
	1,6 HEXANE METHYLENE (RESIN	855-06-0	ilv-tha Her	0.0050 0	. 0350				
		(1	1308-38-9			. 5000			X	
	FL = LOWER FLAM		B6475000 (5000				
	FL = LOWER FLAM FL = UPPER FLAM	MABILII	Y LIMIT	PERCENT						
SI	KIN = SKIN ABSOR	PTION M	UST BE C	ONSIDER	ED AS	A ROUT	E OF EXPOSURE			
C-	-CEILING = ALLOW	. EXPOS	URE LEVE	L SHOUL	D NOT I	BE EXC	EEDED FOR ANY	TIME !	PERIOD	
S	FR = MANUFACTUR TEL = SHORT TERM	EXPOSU	RE LIMIT	EXPUSUR	E LIMI					
X-	-SARA 313 = CHE	MICAL I	S SUBJEC	T TO RE	PORTING	REQU	IREMENTS OF SE	CTION	313	
OF	TITLE III OF S	. A. R. A.	40 CFR I	PART 37	2			F :		
141	IOSH# = NIOSH RE	GIOIRY						UMBER.		
			2	CLITHA	111-1	ICHT I I	INFORMATION			

EFFECTS OF SHORT TERM OVEREXPOSURE

SHALLOWING

May be fatal if swallowed.

SECTION III - HEALTH INFORMATION; (CONTINUED)

Can cause gastrointestinal irritation, nausea, and vomiting. Aspiration of material into lung may cause chemical pneumonitis which can be fatal.

WARNING vapor and spray mist harmful. Overexposure may cause lung damage. May cause lung irritation and allergic respiratory reaction. Effects may be permanent.

May cause respiratory sensitization (potential for allergic reaction). May cause nose or throat irritation. High concentrations may cause acute central nervous system depression characterized by headaches, dizziness, nausea and confusion

May cause severe eye irritation.

SKIN

Liquid material may be absorbed through the skin in harmful amounts. Primary skin irritant.

May cause skin sensitization (allergic reaction).

May cause defatting and irritation of the skin.

EFFECTS OF REPEATED OVEREXPOSURE

Repeated and prolonged occupational overexposure to crystalline silica may cause silicosis, a progressively disabling lung disease. Overexposure to xylene may cause injury to the liver, kidneys, and

The OSHA Permissible Exposure Limit for amorphous silica is 20 Mppcf or PEL= BOmg/M3_

%Si02

Repeated overexposure to toluene may cause liver damage. Repeated exposure to diisocyanates may result in respiratory sensitization in some individuals. Respiratory sensitivity results in asthma-like symptoms on subsequent exposure at concentrations even below the TLV. Prexisting respiratory conditions may be aggravated by exposure to crystalline silica.

Reports have associated prolonged and repeated occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

SIGNIFICANT LABORATORY DATA HITH POSSIBLE RELEVANCE TO HUMAN HEALTH.

Titanium dioxide IS NOT listed as a potential carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, OSHA, or A. C. G. I. H. Dry titanium dioxide in a 24-month inhalation study with rats revealed a significant increase in benign and malignant lung tumors in the group exposed to 250mg/M3 respirable TiO2 dust. At lower exposure levels, this significant effect was not observed. The normal clearance mechanisms of the lungs may have been overwhelmed at the 250mg/M3 exposure level, and this may have contributed to the tumor formation. These results may not be directly relevant to the workplace where occupational exposure limits are observed. At the TLV the TiO2 manufacturer concludes that there is no significant hazard for man.

Toluene has been found to cause kidney, lung and spleen damage in laboratory animals.

Laboratory studies involving rats indicates that Methyl Isobutyl Ketone may damage the kidneys.

The International Agency for Research on Cancer considers crystalline silica to have limited evidence of carcinogenicity in humans and sufficient evidence in experimental animals (IARC Group 2A).

The Chromium III Oxide supplier has concluded that Chromium III Oxide is not carcinogenic by OSHA definitions or by the evidence presented by the International Agency for Research on Cancer (IARC). (IARC has listed "Chromium and Certain Chromium Compounds" as Group 1 carcinogens. }

SECTION IU - FIRST AID AND EMERGENCY PROCEDURES

SHALLDHING

If swallowed do not induce vomiting. Call poison control center, hospital emergency room or physician immediately. TNHAL ATTON

Remove to fresh air immediately. If breathing has stopped, give artificial respiration. Keep warm and quiet. Get medical attention immediately.

FYE

Flush with large amounts of water, lifting upper and lower lids occasionally. Continue for at least 15 minutes. Get medical attention.

SKIN

Remove contaminated clothing. Wash affected area with soap and water. Obtain medical attention if irritation persists.

Any treatment that might be required for overexposure should be directed at the control of symptoms and the clinical conditions.

SECTION U - PHYSICAL DATA

231 DEG.F. (111 DEG.C.) TO 419 DEG.F. (215 DEG.C.) BOILING RANGE

SECTION U - PHYSICAL DATA; (CONTINUET)

FREEZING POINT

-50 DEG. F. (-45 DEG. C.)

VAPOR PRESSURE

22 MM H9 @ 68 DEG. F. (20 DEG. C.)

VAPOR DENSITY

% VOLATILE BY VOLUME

Heavier than air.

EVAPORATION RATE VOC 3.49 LB/GAL LESS WATER & NPRS# 419 G/L LESS WATER

Slower than diethyl ether.

WGT LB/GAL 10.4 VOC 6.89 LB/GAL SOLIDS 827 G/L SOLIDS

CALCULATED CALCULATED

SPECIFIC GRAVITY 1 2

APPEARENCE & ODOR: Liquid, Solvent odor

SOLUBILITY: Slight in water

VISCOSITY:

65-80 KU

4-7 (STD Units)

All Physical data determined at 68 DEG. F. (20 DEG. C.) 760 mm H9 * Negligibly Photochemically Reactive Materials VOC values reported here are verified by ASTM method D-3960

SECTION VI - FIRE AND EXPLOSION DATA

NFPA FLAMMABILITY CLASSIFICATION

FLAMMABLE LIQUID - CLASS IB

FLAMABLE LIMITS 1.0 % - 8.0 %

FLASHPOINT

40 DEG. F.

(4 DEG. C.)

CALCULATED

AUTOIGNITION

CORROSION RATE

572 DEG. F. (300 DEG. C.) DECOMPOSITION TEMP Not applicable

MAGNETISM

Not applicable

1832 DEG. F. (1000 DEG. C.)

NET EXPLOSIVE HEIGHT Not applicable

EXTINGUISHING MEDIA

Use NFPA Class B Fire extinguishers (carbon dioxide, all purpose dry chemical or alcohol foam) designed to extinguish flammoble liquid fires. Polymer foam is preferred for large fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS

During emergency conditions, overexposure to decompostion products may cause a health hazard. Symptoms may not be immediately reparent. Obtain medical attention. WARNING] FLAMMABLE.

SPECIAL FIRE FIGHTING PROCEDURES

Firefighters should wear self-contained breathing apparatus. Water may be ineffective, but may be used to cool exposed containers to prevent pressure build-up and possible auto-ignition or explosion when exposed to extreme heat. If water is used, fog nozzles are preferable.

SECTION VII - REACTIVITY DATA

NEUTRALIZING AGENT

STABILITY

Normally stable.

CONDITIONS TO AVOID

Avoid excessive heat (>115 F (46 C) and sources of ignition.

INCOMPATABILITY (MATERIALS TO AVOID)

Strong acids or alkaline materials.

No information found

Oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS

Burning, including when heated by welding or cutting, will produce smoke, carbon monoxide and carbon dioxide. In addition, exides of nitrogen , oxides of chromium, may be generated.

The reaction of isocyanates with water may produce carbon dioxide gas which may result in container pressurization.

Welding, brazing, or torch cutting materials chated with this product may produce metal oxides. Overexposure to these metal oxides may result in "Metal Fume Fever". Symptoms include a flu-like illness with fever, chills, and cough. An air purifying or supplied air respirator may be required depending upon levels of exposure. Consult a qualified howith and safety professional

HAZARDOUS POLYMERIZATION

Will not occur CONDITIONS TO AVOID None known

SECTION VIII - ENVIRONMENTAL INFORMATION

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED Use NIOSH/MSHA approved, TC19C, air-supplied breathing apparatus. Fage: 1

MATERIAL SAFETY DATA SHEET Printed : 03/31/94 For Coavings, Resins and Related Materials

CONTRACT GS-10F-52781

SECTION I - PRODUCT	INDENTIFICATION
---------------------	-----------------

"anufacturer" DEFT, INC. (CAGE Code 33461) Information Phone: (714) 474-0400

17451 VON KARMAN AVE.

Emergency Phone: (800) 424-9300 CHEMTREC Phone: 800-424-9300

CA

IRVINE 92714

! Hazard Ratings: Health - 3

! none -> extreme Fire - 3

Product Class: POLYAMIDE Trade Name : COMP A, MIL-P-53030

Product Code : 44W007

C. A. S. Number: NONE

NSN: 8010-01-193-0520 8010-01-193-0519

Prepared By MIKE SMITH Title : CHEMIST

8010-01-193-0521

! 0 ---> 4 Reactivity - 1

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	eight 1 % - ACGI	Exposur H/TLV		nits A/PEL	- VP mm HG
n-BUTYL ALCOHOL	₹ 71-36-3	10. 50	ppm	50	p p m	4: 4:
C8&10 AROMATIC HYDROCARBON	64742-95-6	STEL = 10.	N. E. N. E.		N. E. N. E.	@ 68F 3
Manufacturer recommend: DISPERSION AGENT		STEL = ppm.	N. E.		N. E.	@ 68F
	TRADE SECRET	< 1. STEL =	N. E.		N. E.	0
ZINC PHOSPHATE	7779-90-0	15. 10	N.E. mp/F3	15	N.E. mp/F3	0
ZINC COMPOUND	60580-61-2	STEL =	N. E. N. E.		N. E. N. E.	0
		STEL =	N. E.		N. E.	

THE ABOVE LISTED PRODUCTS ARE ON THE TSCA INVENTORY LIST.

N. E. = Not Established

SECTION III - PHYSICAL DATA

Boiling Range: 244 - 335 Deg. F Vapor Density: Heavier than Air. Evap. Rate: 0.2 x n-Butyl Acetate Liquid Density: Heavier than Water. Volatiles vol % 43.3 Wgt% 21.3 Wgt per gallon: 14.24 Pounds.

Spec. Gravity: 1.70948

Appearance: WHITE LIQUID WITH SOLVENT ODOR

V. D. C. : 362 G/L

106 Gal

SOLUBILITY IN WATER: Insoluble PH: Not applicable AUTOIGNITION TEMPERATURE: No information found

DECOMPOSITION TEMPERATURE: No information found

(106) (14.24) = 1509.44 165

CORROSION RATE: No information found

VISCOSITY: Thin liquid to heavy viscous material 1 -Butyl Alchol 10% = (.10) (1509.44) =

150,941bs

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA:

FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG

SPECIAL FIREFIGHTING PROCEDURES:

Full fire fighting equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. Water may be used to cool closed containers to prevent pressure build-up, auto ignition or explosion.

UNUSUAL FIRE & EXPLOSION HAZARDS:

Keep containers tightly closed. Isolate from heat, sparks, electrical equipment and open flame. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent.

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

SEE SECTION II, HAZARDOUS INGREDIENTS.

-EFFECTS OF OVEREXPOSURE:

INHALATION: Irritation of the respiratory tract & acute nervous system depression characterized by the following progressive steps: headache, dizziness, staggering gait, confusion, unconsciousness or coma.

SKIN AND EYE CONTACT: SKIN: Contact with the skin can cause irritation. Symptoms may be swelling, redness, and rash. EYES: Liquid, areosols, or vapors are irritating and may cause tearing, redness, and swelling accompanied by a stinging sensation.

SKIN ABSORPTION: Prolonged or repeated contact can cause moderate irritation, drying, and defatting of the skin which can cause the skin to crack.

INGESTION: Acute: Can result in irritation and possible corrosive action in the mouth, stomach tissue and digestive tract. Vomiting may cause aspiration of the solvent, resulting in chemical pneumonitis.

HEALTH HAZARDS (ACUTE AND CHRONIC)

ACUTE: Vapors are irritating to eyes, nose, and throat. Inhalation may cause headaches, difficult breathing and loss of

CHRONIC: Prolonged contact will cause drying and cracking of the skin, due to defatting action. Skin sensitization, asthma or a more process. other allergic responses may develop. Potential for kidney and (CASIN // 1-A.) (Eller on Empley Steed of Flugil mill (Aladyll) liver damage.

PRIMARY ROUTE(S) OF ENTRY: TOPICAL (SKIN CONTACT): Yes (cont.)

Material Safety Data Sheet for: CDMP A, MIL-P-53030(44W007)

SECTION V - HEALTH HAZARD DATA (cont.)

-EFFECTS OF OVEREXPOSURE: (cont.)

INGESTION (GASTRO-INTESTINAL): No

INHALATION (LUNGS): Yes

CARCINOGENICITY:

NTP?: NO, IARC MONOGRAPHS?: NO, OSHA REGULATED?: NO

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Asthma and any other respiratory disorders. Skin allergies, eczema, and dermititis.

-FIRST AID:

INHALATION: Move to an area free from risk of further exposure. Restore breathing. Asthmatic type symptoms may develop and may be immediate or delayed by several hours. Obtain medical attention.

SKIN: Remove contaminated clothing. Wash affected areas thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse.

EYES: Flush with clean lukewarm water (low pressure) for at least 15 minutes, occasionally lifting eyelids. Obtain medical attention.

INGESTION: Do not induce vomiting. Do not give anything to an unconscious person. Obtain medical attention.

SECTION VI - REACTIVITY DATA

STABLITY: [] Unstable [x] Stable

HAZARDOUS POLYMERIZATION: [] May occur [x] Will not occur

-INCOMPATIBILITY

OXIDIZING MATERIALS AND STRONG ACIDS. EPOXY RESINS UNDER UNCONTROLLED CONDITIONS.

-CONDITIONS TO AVOID

HIGH TEMPERATURES. EPOXY RESINS UNDER UNCONTROLLED CONDITIONS. -HAZARDOUS DECOMPOSITION PRODUCTS:

BY HIGH HEAT/TEMPERATURE: Carbon monoxide, carbon dioxide, and oxides of nitrogen.

SECTION VII - SPILL OR LEAK PROCEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Evacuate all non-essential personnel. Remove all sources of ignition (flame, spark sources, hot surfaces). Ventilate area Contain and remove with inert absorbent and non-sparking tools.

SECTION VII - SPILL OR LEAK PROCEDURES (cont.)

WASTE DISPOSAL METHOD:

aqe: 4

Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Empty containers must be handled with care, due to product residue and flammable vapor DO NOT incinerate closed containers.

ALSO SEE SECTION IV, V, VI, FOR OTHER PRECAUTIONS.

EPA HAZARDOUS WASTE NUMBER/CODE: DOO1, FOO3

HAZARDOUS WASTE CHARACTERISTICS:

IGNITABILITY: YES CORROSIVITY: NO YES REACTIVITY:

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

A respirator that is recommended or approved for use in an organic vapor environment (air purifying or fresh air supplied) is necessary. Observe OSHA regulations for respirator use. Ventilation should be provided to keep exposure levels below the OSHA permissible limits.

-VENTILATION:

Exhaust ventilation sufficient to keep the airborne concentrations of solvent vapors or mists below their respective TLV's must be utilized. Remove all ignition sources (heat, sparks, flame, and hot surfaces).

-PROTECTIVE GLOVES:

Protective gloves are recommended (cotton, neoprene, rubber, polyethylene) to prevent skin contact.

-EYE PROTECTION:

The use of safety eyewear is recommended, including splash guards or side shields, chemical goggles or face shields.

-OTHER PROTECTIVE EQUIPMENT:

The use of long sleeve and long leg clothing is recommended. Remove and wash contaminated clothing before reuse.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Store in buildings designed to comply with OSHA 1910.106 Avoid storing near high temperatures, fire, open flames, and spark sources. Store in tightly closed containers. Store in well ventilated areas.

-OTHER PRECAUTIONS:

Keep containers tight and upright to prevent leakage. Prevent prolonged breathing of vapors or spray mists. Prolonged overexposure may cause an allergic reaction. Aviod contact with skin and eyes. Do not take internally. Do not handle until the manufacturers safety precautions have been read and understood. Wash hands before eating, smoking, or using washroom. Smoke in smoking areas ONLY.

Page: 5 DEFT: INC. (CAGE Code 33461)
Material Safety Data Sheet for: COMP A.MIL-P-53030(44W007)

SECTION IX - SPECIAL PRECAUTIONS (cont.)

-OTHER PRECAUTIONS: (cont.)

*** TRANSPORTATION INFORMATION ***

APPLICABLE REGULATIONS: 49 CFR (YES); IMCO (NO); IATA (NO)

MILITARY AIR (AFR 71-4) (NO)

PROPER SHIPPING NAME: Paint

UN NUMBER: UN-1263

REPORTABLE QUANTITY: Not applicable HAZARD CLASS: Flammable liquid 3 REQUIRED LABELS: Flammable liquid

U.S. POSTAL REGULATIONS: Not allowed to send via US POSTAL

SERVICE.

*** DISCLAIMER ***

Information contained herein is furnished without warranty of any kind. Employers should use the information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of the materials and for the safety and health of their employees.

ACTUAL VOC DETERMINED PER EPA REFERENCE METHOD 24.

SECTION X - REGULATORY INFORMATION

-SARA 313:

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right To Know Act of 1986 and of 40 CFR 372:

CAS#	Chemical Name	Weight	bу
71-36-3	n-BUTYL ALCOHOL		÷
S SA TOTAL CON		10. 83	
60580-61-2	ZINC COMPOUND	0.29	

-PROP 65-CARCENOGENIC

WARNING: This product contains a chemical known to the state of California to cause cancer.

CAS#

Chemical Name

None

Page: 5 DEFT: INC. (CAGE Code 33461) Material Safety Data Sheet for: COMP 4:MIL-P-53030(44W007)

SECTION X - REGULATORY INFORMATION (cont.)

-PROP 65-TETRATOGENIC:

WARNING: This product contains a chemical known to the state of California to cause birth defects or other reproductive harm.

CAS#

Chemical Name

None

-PROP 65-CARCENOGENIC & TETRATOGENIC

WARNING: This product may contain a chemical known to the state of California to cause cancer or birth defects or other reproductive harm

CAS#

Chemical Name

7779-90-0

ZINC PHOSPHATE

Containes Hexavalent chromium, (less than 0.1% by weight)

Theoret Nam

no.

Page: 1

MATERIAL SAFETY DATA SHEET | Printed : 03/31/94

CA

For Coatings, Resins and Related Materials

재 분위 및 용 씨 현 씨 및 병 본 위 및 변 및 및 원 분 원 전 및 한 위 및 분 등 의 전 및 한 위 전 한 점 및 및 후 및 한 경 등 및 및 부 시 및 한 경 및 및 한 원 및 한 경 및 -SECTION : - PRODUCT INDENTIFICATION

Manufacturer: DEFT, INC. (CAGE Code 33461) Information Phone: (714) 474-0400

17451 VON KARMAN AVE.

IRVINE 92714

Emergency Phone: (800) 424-9300 CHEMTREC Phone: 800-424-9300

Product Class: EPOXY

Trade Name : COMP B, MIL-P-53030

Product Code : 44W007CAT

C. A. S. Number: NONE

Prepared By MIKE SMITH

Title : CHEMIST

! Hazard Ratings: Health - 3 ! none -> extreme Fire - 3 ! O ---> 4 Reactivity - 1

SECTION II - HAZARDOUS INGREDIENTS

Weight --- Exposure Limits ---- VP Ingredients % ACGIH/TLV OSHA/PEL mm HG CAS #

NITROETHANE

CB&10 AROMATIC HYDROCARBON 64742-95-6 < 5.

79-24-3 15. 100 ppm 100 ppm 20.9 STEL = N.E. N.E. @ 77F 64742-95-6 < 5. N.E. N.E. 3 STEL = N.E. N.E. @ 68F

Manufacturer recommends a PEL of 100 ppm.

THE ABOVE LISTED PRODUCTS ARE ON THE TSCA INVENTORY LIST.

N. E. = Not Established

SECTION III - PHYSICAL DATA

Boiling Range: 237 - 335 Deg. F Vapor Density: Heavier than Air. Evap. Rate: 0.96 x n-Butyl Acetate Liquid Density: Heavier than Water. Volatiles vol % 21.8 Wgt% 19.5 Wgt per gallon: 9.40 Pounds.

Spec. Gravity:

1. 12845

Appearance: AMBER LIQUID WITH SOLVENT ODOR

V. O. C.: 219 G/L

SOLUBILITY IN WATER: Insoluble PH: Not applicable

AUTOIGNITION TEMPERATURE: No information found DECOMPOSITION TEMPERATURE: No information found

CORROSION RATE: No information found

VISCOSITY: Thin liquid to heavy viscous material

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: IC Flash Point: 87 F TCC LEL: 1.00% UEL: 0.00%

-EXTINGUISHING MEDIA:

FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG

°age: 2

SECTION IV - FIRE AND EXPLOSION HAZARD DATA (cont.)

-SPECIAL FIREFIGHTING PROCEDURES:

Full fire fighting equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. Water may be used to cool closed containers to prevent pressure build-up, auto ignition or explosion.

-UNUSUAL FIRE & EXPLOSION HAZARDS:

Keep containers tightly closed. Isolate from heat, sparks, electrical equipment and open flame. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent.

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

SEE SECTION II, HAZARDOUS INGREDIENTS.

-EFFECTS OF OVEREXPOSURE:

INHALATION: Irritation of the respiratory tract & acute nervous system depression characterized by the following progressive steps: headache, dizziness, staggering gait, confusion, unconsciousness or coma.

SKIN AND EYE CONTACT: SKIN: Contact with the skin can cause irritation. Symptoms may be swelling, redness, and rash. EYES: Liquid, areosols, or vapors are irritating and may cause tearing, redness, and swelling accompanied by a stinging sensation.

SKIN ABSORPTION: Prolonged or repeated contact can cause moderate irritation, drying, and defatting of the skin which can cause the skin to crack.

INGESTION: Acute: Can result in irritation and possible corrosive action in the mouth, stomach tissue and digestive tract. Yomiting may cause aspiration of the solvent, resulting in chemical pneumonitis.

HEALTH HAZARDS (ACUTE AND CHRONIC)

ACUTE: Vapors are irritating to eyes, nose, and throat.
Inhalation may cause headaches, difficult breathing and loss of consciousness.

CHRONIC: Prolonged contact will cause drying and cracking of the skin, due to defatting action. Skin sensitization, asthma or other allergic responses may develop.

PRIMARY ROUTE(S) OF ENTRY:

TOPICAL (SKIN CONTACT): Yes and the state of the state

CARCINOGENICITY:

≘age: 3 DEFT, INC. (CAGE Code 33461) Material Safety Data Sheet for: COMP B, MIL-P-53030(44W007CAT)

SECTION V - HEALTH HAZARD DATA (cont.)

-EFFECTS OF OVEREXPOSURE: (cont.)

NTP?: NO, IARC MONOGRAPHS?: NO, OSHA REGULATED?: NO

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Asthma and any other respiratory disorders. Skin allergies, eczema, and dermititis.

-FIRST AID:

INHALATION: Move to an area free from risk of further exposure. Restore breathing. Asthmatic type symptoms may develop and may be immediate or delayed by several hours. Obtain medical attention.

SKIN: Remove contaminated clothing. Wash affected areas thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse.

EYES: Flush with clean lukewarm water (low pressure) for at least 15 minutes, occasionally lifting eyelids. Obtain medical attention.

INGESTION: Do not induce vomiting. Do not give anything to an unconscious person. Obtain medical attention.

SECTION VI - REACTIVITY DATA

7 7

-INCOMPATIBILITY

STRONG OXIDIZING AGENTS AND STRONG LEWIS OR MINERAL ACIDS.

-CONDITIONS TO AVOID:

HIGH TEMPERATURES, SPARKS, OR OPEN FLAMES. AVOID UNCONTROLLED REACTIONS WITH AMINES.

-HAZARDOUS DECOMPOSITION PRODUCTS:

BY HIGH HEAT/TEMPERATURE: Carbon monoxide, carbon dioxide, and oxides of nitrogen. Aldehydes and acids may be formed during combustion.

SECTION VII - SPILL OR LEAK PROCEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Evacuate all non-essential personnel. Remove all sources of ignition (flame, spark sources, hot surfaces). Ventilate area Contain and remove with inert absorbent and non-sparking tools.

-WASTE DISPOSAL METHOD:

Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Empty containers must be handled with care, due to product residue and flammable vapor DO NOT incinerate closed containers.

ALSO SEE SECTION IV, V, VI, FOR OTHER PRECAUTIONS.

EPA HAZARDOUS WASTE NUMBER/CODE: DOO1

HAZARDOUS WASTE CHARACTERISTICS:

IGNITABILITY: YES

Material Safety Data Sheet for: COMP B, MIL-P-53030(44W007CAT)

SECTION VII - SPILL OR LEAK PROCEDURES (cont.)

-WASTE DISPOSAL METHOD: (cont.)

CORROSIVITY: NO REACTIVITY: YES

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

A respirator that is recommended or approved for use in an organic vapor environment (air purifying or fresh air supplied) is necessary. Observe OSHA regulations for respirator use. Ventilation should be provided to keep exposure levels below the OSHA permissible limits.

-VENTILATION:

≘age:

Exhaust ventilation sufficient to keep the airborne concentrations of solvent vapors or mists below their respective TLV's must be utilized. Remove all ignition sources (heat, sparks, flame, and hot surfaces).

-PROTECTIVE GLOVES:

Protective gloves are recommended (cotton, neoprene, rubber, polyethylene) to prevent skin contact.

-EYE PROTECTION:

The use of safety eyewear is recommended, including splash quards or side shields, chemical goggles or face shields.

-OTHER PROTECTIVE EQUIPMENT:

The use of long sleeve and long leg clothing is recommended. Remove and wash contaminated clothing before reuse.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Store in buildings designed to comply with CSHA 1910.106 Avoid storing near high tamperatures, fire, open flames, and spark sources. Store in tightly closed containers. Store in well ventilated areas.

-OTHER PRECAUTIONS:

Keep containers tight and upright to prevent leakage. Prevent prolonged breathing of vapors or spray mists. Prolonged overexposure may cause an allergic reaction. Aviod contact with skin and eyes. Do not take internally. Do not handle until the manufacturers safety precautions have been read and understood. Wash hands before eating, smoking, or using washroom. Smoke in smoking areas ONLY.

*** TRANSPORTATION INFORMATION *** faither lammar Indeam darway care!

APPLICABLE REGULATIONS: 49 CFR (YES); IMCO (NO); IATA (NO) MILITARY AIR (AFR 71-4) (NO)

PROPER SHIPPING NAME: Paint ______UN NUMBER: UN-1263 TOBE IS TO A REPORTABLE QUANTITY: Not applicable of addo Magmun a man about the real HAZARD CLASS: Flammable liquid 3 REQUIRED LABELS: Flammable liquid

Page: 5 DEFT: INC. (CAGE Code 33461) Material Safety Data Sheet for: COMP 5, MIL-P-53030(44W007CAT) SECTION IX - SPECIAL PRECAUTIONS (cont.) -OTHER PRECAUTIONS: (cont.) U.S. POSTAL REGULATIONS: Not allowed to send via US POSTAL SERVICE *** DISCLAIMER *** Information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of the materials and for the safety and health of their employees. ACTUAL VOC DETERMINED PER EPA REFERENCE METHOD 24. SECTION X - REGULATORY INFORMATION -SARA 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right To Know Act of 1986 and of 40 CFR 372: Percent by CAS# Chemical Name Weight None -PROP 65-CARCENOGENIC WARNING: This product contains a chemical known to the state of California to cause cancer. CAS# Chemical Name None

-PROP 65-TETRATOGENIC:

WARNING: This product contains a chemical known to the state of California to cause birth defects or other reproductive harm.

CAS#

Chemical Name

None

DEFT. INC. (CAGE Code 33461)
Material Safety Data Sheet for; COMP B. MIL-P-53030(44W007CAT)

SECTION X - REGULATORY INFORMATION (cont.)

-PROP 65-TETRATOGENIC: (cont.)

-PROP 65-CARCENOGENIC & TETRATOGENIC
WARNING: This product may contain a chemical known to the state of California to cause cancer or birth defects or other reproductive harm

CAS# Chemical Name

None

most)

DOD Hazardous Materials Information System DOD 6050.5-L AS OF November 1992

(9,7)(5)= 48,5 16s

AS OF November 1992 FSC: 8010 NIIN: 002972116 Manufacturer's CAGE: 61196 Part No. Indicator: D Part Number/Trade Name: EN LUST QD STY ALKYD O/D 34088 ID 743410 Nuclear Water Data This is not a Nuclear Water Chemical NIIN. ------General Information Item Name: ENAMEL QUICK DRY OLIVE DRAB 34088 Manufacturer's Name: PRATT & LAMBERT, INC. Manufacturer's Street: 16116 E 13TH ST Manufacturer's P. O. Box: 2153 Manufacturer's City: WICHITA Manufacturer's State: KS Manufacturer's Country: US Manufacturer's Zip Code: 67201 Manufacturer's Emerg Ph #: Manufacturer's Info Ph #: Distributor/Vendor # 1: Distributor/Vendor # 1 Cage: Distributor/Vendor # 2: Distributor/Vendor # 2 Cage: Distributor/Vendor # 3: Distributor/Vendor # 3 Cage: Distributor/Vendor # 4: Distributor/Vendor # 4 Cage: Safety Data Action Code: Safety Focal Point: G Record No. For Safety Entry: 004 Tot Safety Entries This Stk#: 010 Status: Date MSDS Prepared: 11MAR88 Safety Data Review Date: 01NOV89 Supply Item Manager: GSA MSDS Preparer's Name: W.A. ELLISON Preparer's Company: PRATT & LAMBERT, INC. Preparer's St Or P. O. Box: 2153 Preparer's City: WICHITA Preparer's State: KS Preparer's Zip Code: 67201 Other MSDS Number: MSDS Serial Number: BHMMR Specification Number: TT-E-516A Spec Type, Grade, Class: NK Hazard Characteristic Code:

Unit Of Issue: GL

Type Of Container: METAL Net Unit Weight: 9.7 LBS

Unit Of Issue Container Qty: 1 GL CN

A TOMOR STATE OF THE PARTY OF T

NRC/State License Number: NK
Net Explosive Weight: NK
Net Propellant Weight-Ammo: NK
Coast Guard Ammunition Code: NK

Ingredients/Identity Information

Proprietary: NO

Ingredient: N-BUTYL ACETATE (SARA III)

Ingredient Sequence Number: 01

Percent: NK

Ingredient Action Code: Ingredient Focal Point: G

NIOSH (RTECS) Number: AF7350000

CAS Number: 123-86-4

OSHA PEL: 150 PPM/200 STEL ACGIH TLV: 150 PPM/200STEL;9192

Other Recommended Limit: NK

Proprietary: NO

Ingredient: NAPHTA (PETROLEUM SPIRITS OR BENZIN)

Ingredient Sequence Number: 02

Percent: NK

Ingredient Action Code: Ingredient Focal Point: G

NIOSH (RTECS) Number: DE3030000

CAS Number: 8030-30-6

OSHA PEL: 100 PPM

ACGIH TLV: NOT ESTABLISHED Other Recommended Limit: NK

Proprietary: NO

Ingredient: ISOPROPYL ALCOHOL (SARA III)

Ingredient Sequence Number: 03

Percent: NK

Ingredient Action Code: Ingredient Focal Point: G

NIOSH (RTECS) Number: NT8050000

CAS Number: 67-63-0

OSHA PEL: 400 PPM/500 STEL ACGIH TLV: 400 PPM/500STEL;9192 Other Recommended Limit: NK

Proprietary: NO

Ingredient: NAPHTA (PETROLEUM SPIRITS OR BENZIN)

Ingredient Sequence Number: 04

Percent: NK

Ingredient Action Code: Ingredient Focal Point: G

NIOSH (RTECS) Number: DE3030000

CAS Number: 8030-30-6

OSHA PEL: 100 PPM

ACGIH TLV: NOT ESTABLISHED Other Recommended Limit: NK

Proprietary: NO

Ingredient: TALC (CONTAINING NO ASBESTOS)

Ingredient Sequence Number: 05 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: WW2710000 CAS Number: 14807-96-6 OSHA PEL: 2 MG/M3 RDUST ACGIH TLV: 2 MG/M3 RDUST; 9192 Other Recommended Limit: NK -----Proprietary: NO Ingredient: SILICA, CRYSTALLINE - CRISTOBALITE Ingredient Sequence Number: 06 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: VV7325000 CAS Number: 14464-46-1 OSHA PEL: 0.05 MG/M3 RDUST ACGIH TLV: 0.05 MG/M3 RDUST9192 Other Recommended Limit: NK -----Proprietary: NO Ingredient: SILICA, CRYSTALLINE - FUSED Ingredient Sequence Number: 07 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: VV7328000 CAS Number: 60676-86-0 OSHA PEL: 0.1 MG/M3 RDUST;9293 ACGIH TLV: 0.1 MG/M3 RDUST Other Recommended Limit: NK Proprietary: NO Ingredient: ISOBUTYL ACETATE Ingredient Sequence Number: 08 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: AI2025000 CAS Number: 110-19-0 OSHA PEL: 150 PPM 700 MG/CU.M ACGIH TLV: 150 PPM 700 MG/CU.M. Other Recommended Limit: NK Proprietary: NO Ingredient: VOC. ORGANIC CMPD 4.1 LB/GL LESS WATER & NPRS* 492 G/L LESS WATER VOC 11.1 LB/GAL SOLIDS 1332 G/L SOLIDS CALCULATED. Ingredient Sequence Number: 09 Percent: NK Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: 9999999VO CAS Number: NR OSHA PEL: NK

ACGIH TLV: NK

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SVECTOR : TANK (MOSTE) DISO H TINGEN H Mi LUST NO EM : VITTETU

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Other Recommended Limit: NK
 Proprietary: NO
 Ingredient: VOC 4.16 LB/GAL LESS WATER & NPRS* 499 G/L LESS WATER
 CALCULATED
 Ingredient Sequence Number: 10
 Percent: N/K
 Ingredient Action Code:
 Ingredient Focal Point: G
NIOSH (RTECS) Number: 999999900
CAS Number: NR
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: NONE SPECIFIED
Proprietary: NO
Ingredient: VOC 11.07 LB/GAL SOLIDS 1328 G/L SOLIDS CALCULATED
Ingredient Sequence Number: 11
Percent: N/K
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: 99999990
CAS Number: NR
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: NONE SPECIFIED
______
                  Physical/Chemical Characteristics
------
Appearance And Odor: NK
Boiling Point: 203F / 300F
Melting Point: NK
Vapor Pressure (MM Hg/70 F): NK
Vapor Density (Air=1): >AIR
Specific Gravity: NK
Decomposition Temperature: NK
Evaporation Rate And Ref: SLOWER THAN ETHER
Solubility In Water: NK
Percent Volatiles By Volume: 62
Viscosity: NK
pH: NK
Radioactivity: NK
Form (Radioactive Matl): NK
Magnetism (Milligauss): NK
Corrosion Rate (IPY): NK
Autoignition Temperature: NK
Fire and Explosion Hazard Data
Flash Point: 20F/-6.67C
Flash Point Method: CALCU
Lower Explosive Limit: NK
Upper Explosive Limit: NK
Extinguishing Media: CLASS B FIRE EXTINGUISHERS DESIGNED TO EXTINGUISH
FLAMMABLE LIQUID FIRES. POLYMER FOAM IS PREFERRED FOR LARGE FIRES.
Special Fire Fighting Proc: WEAR SELF CONTAINED BREATHING APPARATUS. USE
WATER TO COOL EXPOSED CONTAINERS TOPREVENT PRESSURE BUILD-UP AND POSSIBLE
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EXPLOSION. FOG NOZZLE PREFERRED W/WATER.

Unusual Fire And Expl Hazrds: OVEREXPOSURE TO DECOMPOSTION PRODUCTS MAY CAUSE A HEALTH HAZARD. OBTAIN MEDICAL ATTENTION. WARNING: FLAMMABLE.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): AVOID EXCESSIVE HEAT AND SOURCES OF IGNITION. Materials To Avoid: STRONG ACIDS OR ALKALINE MATERIALS. OXIDIZING MATERIALS.

Hazardous Decomp Products: BURNING, WHEN HEATED BY WELDING/CUTTING WILL PRODUCE SMOKE, CARBON MONOXIDE AND CARBON DIOXIDE.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): KEEP AWAY FROM HEAT SPARKS AND FLAME.

Health Hazard Data

LD50-LC50 Mixture: NK

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: SWALLOWING: GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING. ASPIRATION OF MATERIAL INTO LUNG MAY CAUSE CHEMICAL PNEUMONITIS. INHALATION: NOSE/THROAT IRRITATION. MAY CAUSE ACUTE CENTRAL NERVOUS SYSTEM DEPRESSION. EYE: MAY CAUSE EYE IRRITATIONSKIN: MAY CAUSE DEFATTING AND IRRITATION OF THE SKIN.

Carcinogenicity - NTP: NK

Carcinogenicity - IARC: NK

Carcinogenicity - OSHA: NK

Explanation Carcinogenicity: NONE CURRENTLY KNOWN.

Signs/Symptoms of Overexp: REPORTS HAVE ASSOCIATED PROLONGED AND REPEATED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. INTENTIONAL MISUSE BY DELIVERATELY INHYALING THE CONTENTS MAY BE HARMFUL OR FATAL. REPEATED EXPOSURE TO CRYSTALLINE SILICA MAY CAUSE PNEUMOCONIOSIS, A PROGESSIVELY DISABLING LUNG DISEASE.

Med Cond Aggravated By Exp: PREXISTING RESPIRATORY CONDITIONS MAY BE AGGRAVATED BY EXPOSURE TO CRYSTALLINE SILICA.

Emergency/First Aid Proc: SWALLOWING: CALL POISON CONTROL CENTER OR EMERGENCY ROOM OR PHYSICIAN IMMED. INHALATION: REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED GIVE CPR. KEEP WARM & QUIET. GET MED ATTN IMMED. EYE: FLUSH WITH LARGE AMOUNTS OF WATER LIFTING UPPERAND LOWER LIDS FOR 15 MIN. GET MED ATTN. SKIN: REMOVE CONTAMINATED CLOTHING. WA SH WITH SOAP AND WATER. GET MED ATTN. IF IRRITATION PERSISTS.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: ELIMINATE ALL SOURCES ELECTRICIAL AND IGNITION SOURCES. DIKE SPILL WITH INERT MATERIAL. TRANSFER OR RECOVER IN METAL CONTATINERS, FOR DISPOSAL. USE ONLY NON-SPARKING TOOLS. PREVENT CONTAMINATION OF SEWERS, STREAMS, GROUNDWATER W/SPILLED MATERIAL. Neutralizing Agent: NK

Waste Disposal Method: INCINERATE ONLY IN EPA PERMITTED FACILITY. RCRA C LASSIFICATION DOO1. CONTAMINATED ABSORBANT DISPOSED IN A HAZARDOUS WASTE LANDFILL. DO NOT INCINERATECLOSED CONTAINERS. DISPOSE ONLY IAW FEDERAL, STATEAND LOCAL REGULATIONS.

Precautions-Handling/Storing: DO NOT STORE ABOVE 95 F. STORE LARGE QUANTITIES IN COMPLIANCE WITH OSHA 29CFR1910.106.

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Other Precautions: CLOSE CONTR AFTER EACH USE. DO NOT BREATH SANDING DUST. EMPTY CONTR NOT TO BE REUSED ANY PURPOSE. CONTRS SHOULD BE GROUNDED & BONDED TO THE REC CONTR. DO NOT WELD/BRAZE/CUT ON CONTR. NEVER USE PRESSURE TO EMPTY. DRUM NOT A PRESSURE VESSEL.

Control Measures

Respiratory Protection: IN RESTRICTED VENTILATION AREAS A NIOSH APPROVE CHEMICAL CARTRIDGE RESPIRATOR MAY BE REQUIRED. IF SPRAYING A MECHANICAL PREFILTER MAY ALSO BE REQUIRED. IN CONFINED AREAS USE A NIOSH/MSHA APPROVE AIR SUPPLIED RESPIRATOR.

Ventilation: PROVIDE GENERAL DILUTION AND LOCAL EXHAUST VENTILATION TO MAINTAIN CONCENTRATIONS OF HAZARDOUS SUBSTANCES.

Protective Gloves: SOLVENT IMPERMEABLE GLOVES

Eye Protection: WEAR SAFETY SPECTACLES.

Other Protective Equipment: NOT LIKELY TO BE NEEDED.

Work

15 August, 1994

MEMORANDUM FOR: Health Clinic ATTN: Fay Jensen

SUBJECT: Emergency Planning & Community Right-to-Know Act (EPCRA)

- 1. The above mentioned Act deals with toxic chemicals as they appear in 40 CFR 372.65(a) and (b). It requires the reporting of the use of these toxic chemicals if over certain thresholds. As a tennant of Seneca Army Depot Activity (SEDA) your organization must list all chemicals used. The base year is January 1, 1994 thru December 31, 1994 and the report is due to EPA by 1 July, 1995 and each year after.
- 2. Please respond to POC Michael Stofka at B123 Public Works Branch 41-532 as soon as possible. Negative responses are required also.

MICHAEL STOFKA

Envir. Prot. Spec.

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MEMORANDUM FOR Public Works Branch, ATTN: Michael Stofka

SUBJECT: Emergency Planning & Community Right-to-Know Act (EPCRA)

- 1. No toxic chemicals are used in SEDA Occupational Health Clinic.
- 2. POC is the undersigned.

FAYE M. JENSEN, RN

Occupational Health Nurse

SDSTO-SEI-FE

15 August, 1994

MEMORANDUM FOR: Defense Reutilization & Marketing Office

SUBJECT: Emergency Planning & Community Right-to-Know Act (EPCRA)

- 1. The above mentioned Act deals with toxic chemicals as they appear in 40 CFR 372.65(a) and (b). It requires the reporting of the use of these toxic chemicals if over certain thresholds. As a tennant of Seneca Army Depot Activity (SEDA) your organization must list all chemicals used. The base year is January 1, 1994 thru becember 31, 1994 and the report is due to EPA by 1 July, 1995 and each year after.
- 2. Please respond to POC Michael Stofka at B123 Public Works Branch 41-532 as soon as possible. Negative responses are required also.

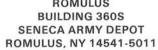
MÍCHAEL STOFKA

Envir. Prot. Spec.

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DEFENSE LOGISTICS AGENCY DEFENSE REUTILIZATION AND MARKETING SERVICE DEFENSE REUTILIZATION AND MARKETING OFFICE ROMULUS RILL DING 3608





23 August 1994

MEMORANDUM FOR: Public Works Branch, Attn; Mr. Michael Stofka.

FROM: DRMO, Mr. David Kabat

SUBJECT: EPCRA

1. This memorandum is to inform your office that the DRMO, Romulus, does not use or store any chemicals or hazardous materials of any kind.

David Kabat DRMO, Romulus



DEFENS: LOGISTICS ASSENCY
ENTRES REUTHIZATION AND JUNE PRETING SERVICE
DEFENSE SHATTLICATION AND MARIO TOLICORNICE
THIRD SERVICE



P.O. Box 28 Romulus, NY 14541-0028 Staff Symbol: Phone: 607-869-5393

5090 30 Jan 1995

From: Commanding Officer, Coast Guard Loran Station (C) Seneca

To: Commander, Seneca Army Depot Activity, (Environmental

Cordinator)

Subj: EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT (EPCRA)

Ref: (a) Seneca Army Depot Activity Memorandum SDSTO-SEI-PE dtd Jan 26, 1995

1. In response to your memorandum, enclosure (1) is an inventory of all toxic chemicals that are stored on board U.S. Coast Guard Loran Station Seneca.

2. Please direct any further questions to MK1 Michael D. Surace at 41--502.

TOWERS

Encl: (1) EPCRA inventory

EPCRA CHEMICAL INVENTORY COMBINED HAZARDOUS CHEMICALS

CHEMICAL NAME	TOTAL	OTY
ACETONE	1.13	GAL
ACRYLONITRICE	0.13	GAL
ALUMINUM	0.08	GAL
AURAMINE	0.08	GAL
BENZENE	0.04	GAL
BUTADIENE	0.13	GAL
COPPER	0.05	PT
ETHYLENE GLYCOL	52.75	GAL
HYDROCHLORIC ACID	0.15	GAL
ISPROPYL ALCOHOL	6.13	GAL
LEAD	0.03	GAL
METHYLENE CHLORIDE	1.34	GAL
METHYL CHLOROFORM	0.91	GAL
METHYL ALCOHOL	1.15	GAL
METHYL ETHYL KEYTONE	0.25	GAL
METHANE	0.04	GAL
N-BUTYL ALCOHOL	0.21	GAL
POTASSIUM HYDROXIDE	2.00	GAL
PRORYLENE	0.003	PT

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SACCHARIN	0.003 PI
SODIUM NITRATE	0.10 GAL
SODIUM HYDROXIDE	0.01 GAL
TOLUENE	0.53 GAL
TRIFLUOROETHANE	0.25 GAL
XYLENES	0.63 GAL

SDSTO-SEI-FE

15 August, 1994

MEMORANDUM FOR: Coast Guard Loran C Station

SUBJECT: Emergency Planning & Community Right-to-Know Act (EPCRA)

- 1. The above mentioned Act deals with toxic chemicals as they appear in 40 CFR 372.65(a) and (b). It requires the reporting of the use of these toxic chemicals if over certain thresholds. As a tennant of Seneca Army Depot Activity (SEDA) your organization must list all chemicals used. The base year is January 1, 1994 thru December 31, 1994 and the report is due to EPA by 1 July, 1995 and each year after.
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MICHAEL STOFKA

Envir. Prot. Spec.

Loran C

EPCRA CHEMICAL INVENTORY COMBINED HAZARDOUS CHEMICALS

CHEMICAL NAME	TOTAL OTY
ACETONE	1.13 GAL
ACRYLONITRICE	0.13 GAL
ALUMINUM	0.08 GAL
AURAMINE	0.08 GAL
BENZENE	0.04 GAL
BUTADIENE	0.13 GAL
COPPER	0.05 PT
ETHYLENE GLYCOL	52.75 GAL
HYDROCHLORIC ACID	0.15 GAL
ISPROPYL ALCOHOL	6.13 GAL
LEAD	0.03 GAL
METHYLENE CHLORIDE	1.34 GAL
METHYL CHLOROFORM	0.91 GAL
METHYL ALCOHOL	1.15 GAL
METHYL ETHYL KEYTONE	0.25 GAL
METHANE	0.04 GAL
N-BUTYL ALCOHOL	
	0.21 GAL
POTASSIUM HYDROXIDE	0.21 GAL 2.00 GAL
POTASSIUM HYDROXIDE PRORYLENE	
	2.00 GAL
PRORYLENE	2.00 GAL 0.003 PT
PRORYLENE SACCHARIN	2.00 GAL 0.003 PT 0.003 PT
PRORYLENE SACCHARIN SODIUM NITRATE	2.00 GAL 0.003 PT 0.003 PT 0.10 GAL
PRORYLENE SACCHARIN SODIUM NITRATE SODIUM HYDROXIDE	2.00 GAL 0.003 PT 0.003 PT 0.10 GAL 0.01 GAL
PRORYLENE SACCHARIN SODIUM NITRATE SODIUM HYDROXIDE TOLUENE	2.00 GAL 0.003 PT 0.003 PT 0.10 GAL 0.01 GAL 0.53 GAL

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HAZARDOUS MATERIAL INVENTORY (LISTED IN FSC ORDER)

NATIONAL STOCK #	DESCRIPTION	QTY
5970-00-962-3335	ELECTRICAL COATING, 3M SCOTCH COAT	5 - 14.5oz
5970-01-017-5738	CRC URETHANE SEAL COAT RED	2 - 15oz
6135-00-801-3493	BATTERY DRY CELL	5 - 2EA
6135-00-835-7210	BATTERY "D" CELL ALKALINE	13 - 12EA
6135-00-985-7846	BATTERY "C" CELL ALKALINE	7 - 12EA
6135-00-850-3177	BATTERY DRY CELL 9V	2
6135	JOHNSON CONTROL BATTERIES LEAD ACID	
6135	ALCAD BATTRERY NICKLE CADIUM	40
6810-00-223-2739	ACETONE, TECHNICAL	5 PINTS
6810-00-286-5435	ISOPROPYL ALCOHOL	5 GAL
6810-00-598-7316	AUSTIN BLEACH	2 GAL
6810-00-753-4993	ISOPROPYL ALCOHOL	6 - 8oz
6810-00-782-2686	ALCOHOL DENATURED	0
6810-00-782-2686 6830-00-584-3041	ALCOHOL DENATURED PROPANE	0 6 - 14oz
	PROPANE	
6830-00-584-3041	PROPANE URINAL CAKES	6 - 14oz
6830-00-584-3041 6840-00-246-6438	PROPANE URINAL CAKES DISINFECTANT	6 - 14oz 13
6830-00-584-3041 6840-00-246-6438 6840-00-598-7326	PROPANE URINAL CAKES DISINFECTANT	6 - 14oz 13 5 GAL
6830-00-584-3041 6840-00-246-6438 6840-00-598-7326 6840-00-N02-0705	PROPANE URINAL CAKES DISINFECTANT DECON RAT KILLER	6 - 14oz 13 5 GAL 2 - 3oz
6830-00-584-3041 6840-00-246-6438 6840-00-598-7326 6840-00-N02-0705 6840-00-N03-0434	PROPANE URINAL CAKES DISINFECTANT DECON RAT KILLER AGWAY INSECTICIDE ODER-X	6 - 14oz 13 5 GAL 2 - 3oz 1 QT
6830-00-584-3041 6840-00-246-6438 6840-00-598-7326 6840-00-N02-0705 6840-00-N03-0434 6840-01-037-1416 6840-01-067-2137	PROPANE URINAL CAKES DISINFECTANT DECON RAT KILLER AGWAY INSECTICIDE ODER-X	6 - 14oz 13 5 GAL 2 - 3oz 1 QT
6830-00-584-3041 6840-00-246-6438 6840-00-598-7326 6840-00-N02-0705 6840-00-N03-0434 6840-01-037-1416 6840-01-067-2137	PROPANE URINAL CAKES DISINFECTANT DECON RAT KILLER AGWAY INSECTICIDE ODER-X INSECTICIDE	6 - 14oz 13 5 GAL 2 - 3oz 1 QT 0
6830-00-584-3041 6840-00-246-6438 6840-00-598-7326 6840-00-N02-0705 6840-00-N03-0434 6840-01-037-1416 6840-01-067-2137 6840-01-108-9578 6840	PROPANE URINAL CAKES DISINFECTANT DECON RAT KILLER AGWAY INSECTICIDE ODER-X INSECTICIDE ROUND-UP HERBICIDE	6 - 14oz 13 5 GAL 2 - 3oz 1 QT 0 1 2 GAL
6830-00-584-3041 6840-00-246-6438 6840-00-598-7326 6840-00-N02-0705 6840-00-N03-0434 6840-01-037-1416 6840-01-067-2137 6840-01-108-9578 6840	URINAL CAKES DISINFECTANT DECON RAT KILLER AGWAY INSECTICIDE ODER-X INSECTICIDE ROUND-UP HERBICIDE ORTHO HORNET & WASP KILLER KOLOR KOT WATER FINDING PASTE	6 - 14oz 13 5 GAL 2 - 3oz 1 QT 0 1 2 GAL 2 - 15oz

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6850-00-926-2275	WINDOW CLEANING COMPOUND	11 - 16oz
6850-00-973-9091	PENITRAITING LUBRICANT	0
6850-01-085-4718	ANTIFREEZE TREATMENT	45 GAL
7930-00-045-6912	REMOVER FLOOR POLISH	5 GAL
7930-00-177-5243	MULTIPURPOSE CLEANER	2 GAL
7930-00-184-9423	GLASS CLEANER	6 GAL
7930-00-205-0442	BON AMI SCOURING POWDER	1 - 14oz
7930-00-205-2870	FLOOR WAX	6 GAL
7930-00-459-2247	OVEN CLEANER COMPOUND	3 - 8oz
7930-00-582-4195	DUST MOP TREATMENT	1 GAL
7930-00-664-6910	GLASS CLEANER	1 - 8oz
7930-00-664-7483	PORCELAIN CLEANING COMPOUND	13 - 20oz
7930-00-721-8592	SCOURING POWDER	6 - 21 oz
7930-00-880-4454	DISH WASHING COMPOUND	2 GAL
7930-00-985-6750	WAX CARNUBA	1 - 16oz
7930-01-073-9870	PORCELAIN CLEANING COMPOUND	13 - 20oz
7930-00-F02-2019	RINSENVAC 5 CARPET CLEANER	25 GAL
8010-00-067-5436	SPRAY PAINT ENAMEL CLEAR	1
8010-00-141-2950	SPRAY PAINT LACQUER YELLOW	2
8010-00-141-2952	SPRAY PAINT LACQUER RED	2
8010-00-180-6343	VARNISH	1 QT
8010-00-225-7961	ALKYD SEMI GLOSS ENAMEL IVORY	0
8010-00-281-2076	STAIN OIL INTERIOR DARK WALNUT	1 GAL
8010-00-286-7737	PAINT ENAMEL GLOSS BROWN	2 GAL
8010-00-290-4049	PAINT OIL ALKYD EXTERIOR WHITE	5 GAL
8010-00-290-6984	SPRAY PAINT LACQUER GLOSS BLACK	3
8010-00-527-2045	PAINT ENAMEL ALKYD YELLOW	3 GAL

	8010-00-527-3200	PAINT ENAMEL ALKYD ORANGE	1	GAL
	8010-00-582-5382	SPRAY PAINT LACQUER FLAT BLACK	1	
	8010-00-584-3148	SPRAY PAINT LACQUER ORANGE	2	
	8010-00-584-3149	SPRAY PAINT LACQUER OLIVE GREEN	1	
	8010-00-584-3150	SPRAY PAINT LACQUER FLAT WHITE	3	
	8010-00-597-7856	VARNISH SPAR PHENOLIC RESIN	1	GAL
	8010-00-597-8234	PAINT REMOVER	2	GAL
	8010-00-664-4761	PAINT ENAMEL ALKYD GLOSS WHITE	2	GAL
	8010-00-721-9742	SPRAY PAINT LACQUER BROWN	4	
X	8010-00-721-9751	SPRAY PAINT LACQUER ALUMINUM	1	
	8010-00-779-9474	PAINT ALKYD IVORY	5	GAL
	8010-00-901-8038	PAINT ENAMEL SEMI-GLOSS WHITE	3	GAL
	8010-00-F00-0374	MASURY ANTI-RUST GLOSS ENAMEL WHITE	1	QT
	8010-00-F00-5456	TRU TEST SEMI-GLOSS LATEX WHITE	1	GAL
	8010-00-F01-4333	JOHN DEERE SPRAY PAINT YELLOW	1	
	8010-00-F01-4334	JOHN DEERE SPRAY PAINT GREEN	3	
	8010-00-F02-1316	TRU TEST LATEX PRIMER SEALER WHITE	2	GAL
	8010-00-N00-0389	IRON CLAD HEAT RESISTANT FINISH ALUMINUM	1	GAL
	8010-00-N00-3153	PERMATEX NAVEL JELLY	1	- 12oz
	8010-00-N01-7721	IRON CLAD EPOXY-ESTER ENAMEL IND WHITE	4	GAL 1 QT
	8010-00-N02-1514	CHARCOAL STARTER	1	- 32oz
	8010-01-272-3208	DEVOE THINNER	1	GAL
	8010	IRON CLAD CHEM & WATER RES EPOXY WHITE	1	GAL
	8010	WOOD STAIN SPECIAL WALNUT	1	QT
	8030-00-081-2239	ADHEISIVE SEALANT	0	
	8030-00-081-2286	SEALING & RETAINING COMPOUND	1	- 5oz
	8030-00-220-6973	FORM-A-GASKET	3	- 4oz

160	

8030-00-281-2726	PRIMER (WASH) PRETREATMENT	1 GAL
8030-00-F01-4043	MONSEY ELASTIC ROOF SEALER	1 GAL
8030	RECTORSEAL PIPE TREAD COMPOUND	1 - 16oz
8030	PERMATEX RUBBERIZED UNDERCOAT	1 - 16oz
8030	MAGIC PLASTIC LEAD	1 - 10oz
8040-00-142-9193	ADHESIVE CYANOACRYLATE	6
8040-00-266-0824	ADHESIVE	1
8040-00-270-8137	BF GOODRICH ADHESIVE	0
8040-00-833-9563	ADHESIVE SILICON	4 - 4.7oz
8040-00-F00-4682	HENRY COVE BASE ADHESIVE	1 GAL
8040	ELMER'S CARPENTERS GLUE ALPHATIC RESIN	1 - 8oz
8040	HWI MULTIPURPOSE PLASTIC PIPE CEMENT	1 PT
8520-00-634-9040	HAND CLEANER	2 GAL
8520	NAPA WATERLESS HAND CLEANER	2 - 5LB
9150-00-181-8097	LUBE OIL 9250	55 GAL
9150-00-186-6699	LUBE OIL 10W-30	10 QT
9150-00-250-0926	PETROLEUM TECHNICAL	1 LB
9150-00-261-7899	PENETRATING OIL	2 PT
9150-00-823-7860	LUBRICATING COMPOUND	6 - 16oz
9150-00-911-7823	GREASE	1
9150-00-935-4018	GREASE	7 - 14oz
9150-01-079-6124	BREAK FREE	2 - 4oz
9150	JOHN DEERE ANTI-SEIZE LUBRICANT	1 - 8oz
9150	LAWSON DRY GRAPHITE LUBRICANT	1 - 10oz
9150	VALVOLINE MOTOR OIL SAE 40	7 QT
9150	LAWNBOY 2 CYCLE OIL	16 - 8oz
9150	McCULLOCH 2 CYCLE OIL	40 - 3oz

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STRO ANTONIA MONOBIOTE ANTONIA AL

9150 EAWNBOY 2 CYCLE OI: 10 - Box

205 - 06 STEEL OTS STEEL OTS 80 - 30x

9150	McCulloch Chain Bar & SPROCKET OIL	5 - 32oz
ACTI-BRITE	CONDENSER CLEANER	2 GAL
PLATI-DIP	PLASTIC DIP COATING	1 GAL
UNION CARBIDE	OXYGEN	N/A
UNION CARBIDE	ACETYLENE	N/A
DEVOE	INTERIOREXTERIOR ALKYD ENAMEL YELLOW	1 - 30oz

And the comments of the second

MEMORANDUM FOR: US Army TMDE Support Center

SUBJECT: Emergency Planning & Community Right-to-Know Act (EPCRA)

- 1. The above mentioned Act deals with toxic chemicals as they appear in 40 CFR 372.65(a) and (b). It requires the reporting of the use of these toxic chemicals if over certain thresholds. As a tennant of Seneca Army Depot Activity (SEDA) your organization must list all chemicals used. The base year is January 1, 1994 thru December 31, 1994 and the report is due to EPA by 1 July, 1995 and each year after.
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Michael Stoffen. MICHAEL STOFKA

Envir. Prot. Spec.

MEMORANDUM FOR Environmental Protection Specialist

SUBJECT: Emergency Planning & Community Right-to-Know Act (EPCRA)

- 1. Reference memorandum SDSTO-SEI-FE, dated 15 Aug 94, SAB.
- 2. Attached fined a Hazardous Materials Inventory Sheet which lists all toxic chemicals used by the U.S. Army TMDE Support Center at the present time and also indicates the quantity on hand.
- 3. POC for questions pertaining to the above is the undersigned at ext 41-268.

CLINTON F. KUNKLE, JR.

Chief, U.S. Army TMDE Suport Center

Seneca Army Depot Activity

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Page _1_ of _1_

Specific location of these materials (building, floor, wing, room number, etc.):

Building 321, within the US Army TMDE Support area of operation.

Material Name Trade/Common		Manufacturer/Importer Name, Address, Telephone	CAS#	Average Quantity On Hand	MSDS Available? Yes/No	Container Label? Yes/No
Alcohol. Denatured	Edgewater.	cess Inc., 596 River Road, NJ 07020 (201) 945-9400	64-17-5 67-56-1	4 GAL	YES	YES
DIO SEAL, Pump Oil	Welch Vacuu Ave., P.O.	m Technology, Inc., 7300 N. Linder 183 Skokie, IL 60076 (708) 676-8800 cess Inc., 596 River Road,	64741-88-4	1 GAL	YES	YES
Lubricating Oil	Edgewater,	NJ 07020 (201) 945-9400	MIL-L-7870A	1 QT	YES	YES
Coating Compound, Obliterating (Aerosol)	MO 63134		A-A-1801	2 Pints	YES	YES
CRC 5-56 (Aerosol)	PA 18974	Is USA, 885 Louis DR, Warminster, (215) 674-4300	765-1434	6 Pints	YES	YES
Cleaner Glass-Plastic	ton HW, Dar	henson Chemical CO, George Washing- bury, CT 06810 (203) 797-2212	MS-260	1 Pint	YES	YES
Detergent, General Purpose	The Lighthon, TX	use of Houston 3530 W. Dallas, 77019 (713) 527-9561	P-D-1747C	4 Pints	YES	YES
-						-
			- 1111			

Inventory Conducted By: Uniter F 1161

Date: 22 June 1994

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1/2
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DOD Hazardous Materials Information System DOD 6050.5-L AS OF November 1992

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FSC: 6810
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NIIN: 005437415

Manufacturer's CAGE: 82925

Part No. Indicator: A

Part Number/Trade Name: O-E-760, ALCOHOL DENATURED, GR III

General Information

Item Name: ALCOHOL, DENATURED

Manufacturer's Name: OCTAGON PROCESS, INC.

Manufacturer's Street: 596 RIVER ROAD

Manufacturer's P. O. Box:

Manufacturer's City: EDGEWATER

Manufacturer's State: NJ

Manufacturer's Country: US

Manufacturer's Zip Code: 07020-1105
Manufacturer's Emerg Ph #: 201-945-9400
Manufacturer's Info Ph #: 201-945-9400

Distributor/Vendor # 1: Distributor/Vendor # 1 Cage: Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage: Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 005 Tot Safety Entries This Stk#: 007

Status:

Date MSDS Prepared: PRE-HCS Safety Data Review Date: 14MAR83

Supply Item Manager: MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City: Preparer's State: Preparer's Zip Code: Other MSDS Number: MSDS Serial Number: BFDQC

Specification Number: 0-E-760

Spec Type, Grade, Class:

Hazard Characteristic Code: F3

Unit Of Issue: CN

Unit Of Issue Container Qty: 1 GAL

Type Of Container: Net Unit Weight:

NRC/State License Number:

Net Explosive Weight:

Net Propellant Weight-Ammo: Coast Guard Ammunition Code:

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Ingredients/Identity Information
Proprietary: NO
Ingredient: ETHYL ALCOHOL (ETHANOL)
Ingredient Sequence Number: 01
Percent: 95
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: KQ6300000
CAS Number: 64-17-5
OSHA PEL: 1000 PPM
ACGIH TLV: 1000 PPM; 9192
Other Recommended Limit:
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Proprietary: NO
Ingredient: METHYL ALCOHOL (METHANOL) (SARA III)
Ingredient Sequence Number: 02
Percent: 5
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: PC1400000
CAS Number: 67-56-1
OSHA PEL: S,200PPM/250STEL
ACGIH TLV: S,200PPM/250STEL; 92
Other Recommended Limit:
______
                Physical/Chemical Characteristics
Appearance And Odor: CLEAR, COLORLESS, VERY MOBILE LIQUID, PLEASANT ODOR
Boiling Point: 148.6F/65C
Melting Point:
Vapor Pressure (MM Hg/70 F): 100
Vapor Density (Air=1): 1.11
Specific Gravity: 0.80
Decomposition Temperature:
Evaporation Rate And Ref: 1,4-BUTYL ACETATE
Solubility In Water: COMPLETE
Percent Volatiles By Volume: 100
Viscosity:
pH:
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY):
Autoignition Temperature:
______
                Fire and Explosion Hazard Data
______
Flash Point: 65F COC
Flash Point Method:
Lower Explosive Limit: 6.0
Upper Explosive Limit: 36.5
Extinguishing Media: DRY CHEMICAL, FOAM, CARBON DIOXIDE, WATER SPRAY
INEFFECTIVE.
Special Fire Fighting Proc: ELIMINATION OF STATIC ELECTROCITY & OTHER
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IGNITION SOURCES

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Special Place Electing Prove Bull Election of entrice Election & concern & colora

Unusual Fire And Expl Hazrds: DANGEROUS WHEN EXPOSED TO HEAT OR FLAME. MODERATE EXPOSION WHEN EXPOSED TO FLAME

Reactivity Data

Stability: YES

Cond To Avoid (Stability): SPARKS & OPEN FLAME

Materials To Avoid: STRONG OXIDIZERS, PERCHLORATES, CHROMIC ACID, NITRIC ACID Hazardous Decomp Products: METHANOL ON EVAPORATION, INCOMPLETE COMBUSTION

MAY RELEASE CO

Hazardous Poly Occur: NO Conditions To Avoid (Poly):

Health Hazard Data

LD50-LC50 Mixture:

Route Of Entry - Inhalation:

Route Of Entry - Skin:

Route Of Entry - Ingestion:

Health Haz Acute And Chronic:

Carcinogenicity - NTP:

Carcinogenicity - IARC:

Carcinogenicity - OSHA:

Explanation Carcinogenicity:

Signs/Symptoms Of Overexp: IRRITATION OF EYES & RESPIRATORY TRACT,

HEADACHE, DIZZINESS, NAUSEA, NARCOSIS, TREMOR, FATIGUE, DROWSINESS

Med Cond Aggravated By Exp:

Emergency/First Aid Proc: IRRIGATE EYES WITH WATER FOR AT LEAST 15 MINUTES.IF SWALLOWED: GIVE A TABLESPOON OF SALT IN A GLASS OF WARM WATER & REPEAT UNTIL VOMIT FLUID IS CLEAR.GIVE TWO TEASPOONFULS OF BAKING SODA IN A GLASS OF WATER.HAVE PATIENT LIE DOWN & KEEP WARM.CALL DOC.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: AVOID CONTACT WITH SPARKS OR OPEN FLAME.WASH AWAY WITH LARGE AMOUNTS OF WATER BUT NOT INTO A CONFINED AREA.PROVIDE GOOD VENTILATION AND USE SELF CONTAINED BREATHING APPARATUS OR ORGANIC CANISTER MASK.

Neutralizing Agent:

Waste Disposal Method: SPRAY INTO FURNACE UNDER CONTROLLED PROCEDURES OR FLUSH AWAY WITH LARGE AMOUNTS OF WATER

Precautions-Handling/Storing: STORE IN COOL PLACE, ADEQUATE VENTILATION. PROTECT CONTAINERS AGAINST PHYSICAL DAMAGE.STORE AWAY FROM ALL POSSIBLE IGNITION SOURCES.

Other Precautions: ELIMINATE STATIC ELECTRICITY.STORE AWAY FROM PERCHLORATES, PEROXIDES, CHROMIC ACID & NITRIC ACID.WEAR CHEMICAL GOGGLES, SELF CONTAINED BREATHING APPARATUS OR ORGANIC CANISTER MASK, GLOVES, BOOTS.

Control Measures

Respiratory Protection: SELF CONTAINED BREATHING APPARATUS OR ORGANIC CANISTER MASK.

Ventilation: AS REQUIRED TO MAINTAIN TLV

Protective Gloves: RUBBER

Eye Protection: CHEMICAL GOGGLES

Other Protective Equipment: RUBBER BOOTS, APRONS

Work Hygienic Practices:

Suppl. Safety & Health Data: ITEM COMPOSITION IS PERCENT BY VOLUME.ITEM MEETS REQUIREMENTS FOR GRADE III UNDER FED SPEC O-E-760.

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 9150

NIIN: 002738663

Manufacturer's CAGE: 64484

Part No. Indicator: A

Part Number/Trade Name: WELCH DUOSEAL HIGH VACUUM PUMP OIL #1407K

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

______ Item Name: LUBRICATING OIL, VACUUM PUMP

Manufacturer's Name: WELCH VACUUM TECHNOLOGY (FORMERLY SARGENT-WELCH CO

Manufacturer's Street: 7300 N LINDER AVE

Manufacturer's P. O. Box: 1026

Manufacturer's City: SKOKIE

Manufacturer's State: IL

Manufacturer's Country: US

Manufacturer's Zip Code: 60077-3217

Manufacturer's Emerg Ph #: 312-267-5300

Manufacturer's Info Ph #: 312-267-5300

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 009

Tot Safety Entries This Stk#: 010

Status: SE

Date MSDS Prepared: 03MAR90

Safety Data Review Date: 13MAY91

Supply Item Manager: CX

MSDS Preparer's Name:

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BDSBP

Specification Number: MIL-L-83767

Spec Type, Grade, Class: TYPE II

Hazard Characteristic Code: N1

Unit Of Issue:

Unit Of Issue Container Qty:

Type Of Container:

Net Unit Weight:

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NRC/State License Number: N/R
Net Explosive Weight:
Net Propellant Weight-Ammo: N/R
Coast Guard Ammunition Code:
______
                Ingredients/Identity Information
______
Proprietary: NO
Ingredient: MINERAL OIL, PETROLEUM DISTILLATES, SOLVENT-DEWAXED HEAVY
PARAFFINIC
Ingredient Sequence Number: 01
Percent: 100
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: PY8038500
CAS Number: 64742-65-0
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: 5 MG/M3 (OIL MIST)
Other Recommended Limit: NONE SPECIFIED
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Proprietary: NO
Ingredient: REFINED HEAVY PARAFFINIC DISTILLATES
Ingredient Sequence Number: 02
Percent: SEE #1
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1003331RP
CAS Number: 64741-88-4
OSHA PEL: 5 MG/M3 (OIL MIST)
ACGIH TLV: 5 MG/M3 (OIL MIST)
Other Recommended Limit: NONE SPECIFIED
______
                Physical/Chemical Characteristics
______
Appearance And Odor: VISCOUS, AMBER LIQUID WITH BLAND ODOR
Boiling Point: 703F,373C
Melting Point: N/K
Vapor Pressure (MM Hg/70 F): NEGLIGIBLE
Vapor Density (Air=1): >1 AIR=1
Specific Gravity: 0.87
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: <1 (N-BUTYL ACETATE=1)
Solubility In Water: NEGLIGIBLE
Percent Volatiles By Volume: N/K
Viscosity:
pH: N/R
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY): UNKNOWN
Autoignition Temperature:
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                Fire and Explosion Hazard Data
______
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Flash Point: 435F,224C Flash Point Method: COC Lower Explosive Limit: N/K

Upper Explosive Limit: N/K

Extinguishing Media: USE WATER FOG, CARBON DIOXIDE, FOAM, OR DRY CHEMICAL. WATER MAY CAUSE FROTHING.

Special Fire Fighting Proc: WEAR FIRE FIGHTING PROTECTIVE EQUIPMENT AND A FULL FACED SELF CONTAINED BREATHING APPARATUS. EVACUATE AREA. COOL FIRE EXPOSED CONTAINERS WITH WATER SPRAY.

Unusual Fire And Expl Hazrds: COMBUSTION OR HEAT OF FIRE MAY PRODUCE HAZARDOUS DECOMPOSITION PRODUCTS AND VAPORS.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): HIGH HEAT, OPEN FLAMES AND OTHER SOURCES OF IGNITION

Materials To Avoid: STRONG OXIDIZING AGENTS

Hazardous Decomp Products: CARBON DIOXIDE, CARBON MONOXIDE, ALDEHYDES AND KETONES, AND OTHER COMBUSTION PRODUCTS.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT APPLICABLE

Health Hazard Data

LD50-LC50 Mixture: LD50 (ORAL RAT) IS ESTIMATED AT >5 G/KG

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: NO

Health Haz Acute And Chronic: EYES/SKIN: IRRITATION. AVOID BREATHING OF MIST. PROLONGED OVEREXPOSURE MAY RESULT IN DERMATITIS AND RESPIRATORY DIFFICULTIES. ANIMAL STUDIES ALSO SHOW AN EFFECT ON THE KIDNEYS FOR EXPOSURE TO MATERIALS SIMILAR TO THIS. AT HIGH TEMPERATURES, ASPIRATION INTO THE LUNGS IS A HAZARD.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: NONE OF THE CHEMICALS IN THIS PRODUCT IS LISTED BY IARC, NTP OR OSHA AS A CARCINOGEN.

Signs/Symptoms Of Overexp: IRRITATION OF EYES AND SKIN UPON CONTACT. IRRITATION OF THE RESPIRATORY TRACT, HEADACHES, DIZZINESS, ANESTHETIC EFFECT AND OTHER CENTRAL NERVOUS SYSTEM EFFECTS INCLUDING DEATH IN RARE CASES. INGESTION MAY CAUSE CRAMPS AND DIARRHEA. INHALATION MAY CAUSE BRONCHITIS OR PULMONARY IRRITATION.

Med Cond Aggravated By Exp: PERSONS WITH A HISTORY OF EYE, SKIN AND RESPIRATORY DISORDERS MAY BE AT INCREASED RISK FROM EXPOSURE.

Emergency/First Aid Proc: EYE: IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR 15 MINUTES. GET MEDICAL ATTENTION. SKIN: WASH WITH SOAP AND WATER. INHALATION: REMOVE TO FRESH AIR. IF BREATHING IS IRREGULAR OR HAS STOPPED, START RESUSCITATION AND ADMINISTER OXYGEN. GET MEDICAL HELP IMMEDIATELY. INGESTION: DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION AT ONCE. IN CASE OF SUBCUTANEOUS OR INTRAMUSCULAR INJECTION, SEEK HELP AT ONCE.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: WEAR PROTECTIVE EQUIPMENT, ELIMINATE SOURCES OF IGNITION, AND VENTILATE AREA AS REQUIRED. RECOVER FREE LIQUID. ABSORB SMALL SPILL WITH INERT MATERIAL. PLACE WASTE IN DOT APPROVED CONTAINER FOR DISPOSAL. KEEP MATERIAL FROM WATERWAYS.

Neutralizing Agent: NONE

Waste Disposal Method: DISPOSE OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

Precautions-Handling/Storing: STORE IN A COOL, DRY, WELL VENTILATED AREA AWAY FROM SOURCES OF IGNITION. KEEP CONTAINER CLOSED WHEN NOT IN USE. PROTECT FROM PHYSICAL DAMAGE.

Other Precautions: AVOID BREATHING OF MIST. MINIMIZE PERIODS OF EXPOSURE TO HIGH TEMPERATURE. AVOID WATER CONTAMINATION. SPILLS ARE SPILLERY AND A HAZARD TO PEDESTRIANS. CLEAN UP AT ONCE.

Control Measures

______ Respiratory Protection: IF VENTILATION DOES NOT MAINTAIN INHALATION EXPOSURES BELOW PEL (TLV), USE NIOSH/MSHA APPROVED RESPIRATOR AS PER CURRENT 29 CFR 1910.134, INSTRUCTIONS/WARNINGS AND NIOSH-RESPIRATOR SELECTION.

Ventilation: MECHANICAL (GENERAL) VENTILATION IS USUALLY ADEQUATE. Protective Gloves: RUBBER GLOVES OR OTHER OIL RESISTANT. Eye Protection: SAFETY GLASSES/CHEMICAL SPLASH GOGGLES

Other Protective Equipment: SAFETY SHOWER AND EYE BATH. INDUSTRIAL TYPE WORK CLOTHING AND APRON AS REQUIRED TO AVOID PROLONGED OR REPEATED CONTACT. Work Hygienic Practices: WASH THOROUGHLY AFTER HANDLING AND BEFORE EATING OR DRINKING. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE.

Suppl. Safety & Health Data: USE AIR-SUPPLIED RESPIRATORY EQUIPMENT IF EXPOSED TO HOT FUMES. TREAT EMPTY CONTAINERS AS DANGEROUS; DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE CONTAINERS TO HEAT, FLAME, SPARKS, PILOT LIGHTS, STATIC ELECTRICITY. RESIDUE MAY BE DIFFICULT TO REMOVE.

Transportation Data

______ Transportation Action Code: Transportation Focal Point: Trans Data Review Date: DOT PSN Code: DOT Proper Shipping Name: DOT Class: DOT Label:

Limited Quantity:

DOT Mode Indicator:

Identification Number:

Reportable Qty - Trans File:

DOT/DoD Exemption Number:

IMO PSN Code:

IMO Proper Shipping Name:

IMO Regulations Page Number:

IMO UN Number:

IMO UN Class:

IMO Subsidiary Risk Label:

IATA PSN Code:

IATA UN ID Number:

IATA Proper Shipping Name:

IATA UN Class:

IATA Subsidiary Risk Class:

IATA Label:

AFR 71-4 PSN Code:

AFR 71-4 Prop. Shipping Name:

AFR 71-4 Class:

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AFR 71-4 Label:
AFR 71-4 ID Number:
AF MMAC Code:
Tech Entry NOS Shipping Name:
Additional Trans Data:
Disposal Data
Disposal Data Action Code:
Disposal Data Focal Point: E
Disposal Data Review Date: 88166
Rec # For This Disp Entry: 02
Tot Disp Entries This Stock#: 002
Landfill Ban Item:
Disposal Supplemental Data: DROWSY, DIZZY, HDACH, NAUSEA/LUNG IRRIT; MIST-CHEM
PNEUMONITIS.INGEST: LARGE AMT-DEPRESSION, HDACH, DROWSY, NAUSEA, VOMIT/DIARR.
SMALL AMT-IRRIT, DIARR. 1 PT TO 1 QT LETHAL ORAL DOSE FOR 150 LB MAN(MFR).
WASTE OILS: DISPOSE AS PER DOD 4160.21M, CHAPTER VI-B65, LATEST EDITION.
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed: NOT REGULATED
1st EPA Haz Wst Char UnUsed: NOT REGULATED BY RCRA
1st EPA Acute Hazard UnUsed: NO
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
______
                           Label Data
Label Required: YES
Date of Technical Review: 13MAY91
Label Date: UNDATED
Manufacturer's Label No.: N/R
Label Status: D
Common Name of Product: WELCH DUOSEAL HIGH VACUUM PUMP OIL #1407K
Chronic Hazard: NO
Signal Word: CAUTION!
Acute Health Hazard-None:
Acute Health Hazard-Slight: X
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight: X
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight: X
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None: X
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
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Reactivity Hazard-Severe:

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Special Hazard Precautions: EYES/SKIN: IRRITATION. AVOID BREATHING OF MIST. PROLONGED OVEREXPOSURE MAY RESULT IN DERMATITIS AND RESPIRATORY DIFFICULTIES. ANIMAL STUDIES ALSO SHOW AN EFFECT ON THE KIDNEYS FOR EXPOSURE TO MATERIALS SIMILAR TO THIS. AT HIGH TEMPERATURES, ASPIRATION INTO THE LUNGS IS A HAZARD. STORE IN A COOL, DRY, WELL VENTILATED AREA AWAY FROM SOURCES OF IGNITION. KEEP CONTAINER CLOSED WHEN NOT IN USE. PROTECT FROM PHYSICAL DAMAGE. FIRST AID: EYE: IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR 15 MINUTES. GET MEDICAL ATTENTION. SKIN: WASH WITH SOAP AND WATER. INHALATION: REMOVE TO FRESH AIR. IF BREATHING IS IRREGULAR OR HAS STOPPED, START RESUSCITATION.

Protect Eye: X Protect Skin: X

Protect Respiratory: X

Mfg's Name From Label: WELCH VACUUM TECHNOLOGY (FORMERLY SARGENT-

WELCH CO

Mfg's Street From Label: 7300 N LINDER AVE

Mfg's P.O. Box From Label: 1026

Mfg's City From Label: SKOKIE

Mfg's State From Label: IL

Mfg's Zip Code From Label: 60077-3217

Mfg's Country From Label: US

Emergency Ph. No. From Label: 312-267-5300

Year Procured:

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 9150

NIIN: 005421430

Manufacturer's CAGE: 82925

Part No. Indicator: A

Part Number/Trade Name: MIL-L-7870A; LUBRICATING OIL, GENERAL PURPOSE

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN. ______

General Information

Item Name: LUBRCATING OIL , GENERAL PURPOSE Manufacturer's Name: OCTAGON PROCESS INC. Manufacturer's Street: 596 RIVER ROAD

Manufacturer's P. O. Box: N/K

Manufacturer's City: EDGEWATER

Manufacturer's State: NJ Manufacturer's Country: US

Manufacturer's Zip Code: 07020-1105

Manufacturer's Emerg Ph #: 201-945-9400

Manufacturer's Info Ph #: 201-945-9400

Distributor/Vendor # 1: AMERICAN WRITING INK CO

Distributor/Vendor # 1 Cage: 82956

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 003

Tot Safety Entries This Stk#: 007

Status: SM

Date MSDS Prepared: 07APR87

Safety Data Review Date: 25FEB91

Supply Item Manager: CX MSDS Preparer's Name: N/K

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BFDLS

Specification Number: MIL-L-7870

Spec Type, Grade, Class: N/K

Hazard Characteristic Code: N1

Unit Of Issue: CN

Unit Of Issue Container Qty: 4.0 FL.OZ

Type Of Container: CAN

Net Unit Weight: 4.0 FL.OZ

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NRC/State License Number: N/R
 Net Explosive Weight:
 Net Propellant Weight-Ammo: N/R
 Coast Guard Ammunition Code:
 ______
                 Ingredients/Identity Information
______
Proprietary: NO
Ingredient: PETROLEUM DISTILLATE
Ingredient Sequence Number: 01
Percent: N/K
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 1001292PD
CAS Number: MIXTURE
OSHA PEL: 5MG/CUM ,AS OIL MIST
ACGIH TLV: 5MG/CUM , AS OIL MIST
Other Recommended Limit: N/R
Proprietary: NO
Ingredient: OTHER COMPONENT (NOT SPECIFIED)
Ingredient Sequence Number: 02
Percent: BALNCE
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: 10032140C
CAS Number: MIXTURE
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: N/K
______
                Physical/Chemical Characteristics
______
Appearance And Odor: PALE YELLOW TO AMBER COLORED LIQUID, SLIGHT PETROLEUM
ODOR .
Boiling Point: 580F,304C
Melting Point: -80F,-62C
Vapor Pressure (MM Hg/70 F): N/K
Vapor Density (Air=1): 680
Specific Gravity: 0.88
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: N/A
Solubility In Water: NEGLIGIBLE
Percent Volatiles By Volume: N/K
Viscosity:
pH: N/K
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY): UNKNOWN
Autoignition Temperature:
Fire and Explosion Hazard Data
______
Flash Point: 315F,157C
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Flash Point: 315F,157C Flash Point Method: C.O.C. Lower Explosive Limit: 1.0

Upper Explosive Limit: 7.0

Extinguishing Media: USE WATER FOG, CARBON DIOXIDE, FOAM, OR DRY CHEMICAL. Special Fire Fighting Proc: FIRE FIGHTERS SHOULD USE NIOSH APPROVED SCBA & FULL PROTECTIVE EQUIPMENT WHEN FIGHTING CHEMICAL FIRE. USE WATER SPRAY TO COOL NEARBY CONTAINERS EXPOSED TO FIRE.

Unusual Fire And Expl Hazrds: AVOID EXTREME HEAT; CO OR SULFUR OXIDES.

Reactivity Data ______

Stability: YES

Cond To Avoid (Stability): HIGH TEMPERATURES, SPARKS, AND OPEN FLAMES

Materials To Avoid: STRONG OXIDIZING AGENTS

Hazardous Decomp Products: CARBON MONOXIDE, SULFUR OXIDES

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): N/R

Health Hazard Data

LD50-LC50 Mixture:

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: NO

Health Haz Acute And Chronic: PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE MILD IRRITATION. HEATED OIL MIST MAY BE IRRITATING TO RESPIRATORY TRACT.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: NO DATA AVAILABLE.

Signs/Symptoms Of Overexp: REDNESS OR DRYING EFFECT ON SKIN.

Med Cond Aggravated By Exp: NO DATA AVAILABLE.

Emergency/First Aid Proc: FLUSH AFFECTED SKIN AREAS W/WATER. IMMEDIATELY

FLUSH EYES W/WATER FOR AT LEAST 15 MINUTES. CALL MD

Precautions for Safe Handling and Use

_____ Steps If Matl Released/Spill: RECOVER FREE LIQUID.ADD ABSORBENT TO SPILL AREA.KEEP PETROLEUM PRODUCTS OUT OF DRAINS, SEWERS & WATERCOURSES BY DIKING OR IMPOUNDING. ADVISE AUTHORITIES IF PRODUCT ENTERS OR MAY ENTER SEWERS, WATERCOURSES OR EXTENSIVE LAND AREAS.

Neutralizing Agent:

Waste Disposal Method: DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, & FEDERAL ENVIRONMENTAL REGULATIONS.

Precautions-Handling/Storing: STORE IN COOL, DRY PLACE. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

Other Precautions: NONE

Control Measures

Respiratory Protection: NORMALLY NOT REQUIRED. USE SUPPLIED AIR

RESPIRATORY PROTECTION IN CONFINED OR ENCLOSED SPACES.

Ventilation: USE LOCAL EXHAUST FOR CAPTURING FUMES & VAPORS. PROVIDE > 60 FPM FACE VELOCITY FOR CONFINED SPACES.

Protective Gloves: CHEMICAL RESISTANT TYPE

Eye Protection: CHEMICAL GOGGLES

Other Protective Equipment: EYE WASH, SAFETY SHOWERS

Work Hygienic Practices: WASH HANDS & FACE AFTER USING. LAUNDER

CONTAMINATED CLOTHING BEFORE REUSE.

```
Suppl. Safety & Health Data:
_____
                      Transportation Data
_____
Transportation Action Code:
Transportation Focal Point: D
Trans Data Review Date: 89166
DOT PSN Code: ZZZ
DOT Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION
DOT Class: N/R
DOT Label: N/R
Limited Quantity:
DOT Mode Indicator:
Identification Number: N/R
Reportable Qty - Trans File:
DOT/DoD Exemption Number:
IMO PSN Code: ZZZ
IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION
IMO Regulations Page Number: N/R
IMO UN Number: N/R
IMO UN Class: N/R
IMO Subsidiary Risk Label: N/R
IATA PSN Code: ZZZ
IATA UN ID Number: N/R
IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
IATA UN Class: N/R
IATA Subsidiary Risk Class: N/R
IATA Label: N/R
AFR 71-4 PSN Code: ZZZ
AFR 71-4 Prop. Shipping Name: NOT REGULATED FOR THIS MODE OF
TRANSPORTATION
AFR 71-4 Class: N/R
AFR 71-4 Label: N/R
AFR 71-4 ID Number: N/R
AF MMAC Code:
Tech Entry NOS Shipping Name:
Additional Trans Data: NOT REGULATED FOR SHIPPING.
_____
                       Disposal Data
Disposal Data Action Code:
```

Disposal Data Action Code:
Disposal Data Focal Point: E
Disposal Data Review Date: 88166
Rec # For This Disp Entry: 01
Tot Disp Entries This Stock#: 001
Landfill Ban Item:
Disposal Supplemental Data: WASTE OILS: DISPOSE AS PER DOD 4160.21M,
CHAPTER VI-B65, LATEST EDITION.
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed: NOT REGULATED
1st EPA Haz Wst Char UnUsed: NOT REGULATED BY RCRA
1st EPA Acute Hazard UnUsed: NO
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
2nd EPA Acute Hazard UnUsed:

3rd EPA Haz Wst Code UnUsed:

```
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
Label Data
______
Label Required: YES
Date of Technical Review: 25FEB91
Label Date: N/K
Manufacturer's Label No.: N/K
Label Status: D
Common Name of Product: MIL-L-7870A; LUBRICATING OIL, GENERAL PURPOSE
Chronic Hazard: N/K
Signal Word: WARNING!
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate: X
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight: X
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight: X
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None: X
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: COMBUSTIBLE MATERIAL, MAY BE IGNITED BY HEAT,
OPEN FLAMES OR SPARKS. MAY BE POISONOUS IF INHALED OR ABSORBED THROUGH SKIN.
VAPORS CAUSE DIZZINESS OR SUFFOCATION. CONTACT MAY IRRITATE OR BURN SKIN
AND EYES. FIRE MAY PRODUCE IRRITATING OR POISONOUS GASES. RUNOFF FROM FIRE
CONTROL OR DILUTION WATER MAY CAUSE POLLUTION.DO NOT TAKE INTERNALLY.DO NOT
BREATHE VAPORS OR MIST.AVOID CONTACT WITH EYES AND SKIN.KEEP AWAY FROM
HEAT, OPEN FLAMES AND SPARKS. FIRST AID: IF INGESTED OR INHALED, REMOVE TO
FRESH AIR AND CONSULT A PHYSICIAN. FOR EYES AND SKIN, FLUSH WITH PLENTY OF
WATER FOR ABOUT 15-20 MINUTES AND SEEK MEDICAL ATTENTION IMMEDIATELY IF
IRRITATION PERSISTS
Protect Eye: X
Protect Skin: X
Protect Respiratory: X
Mfg's Name From Label: OCTAGON PROCESS INC.
Mfg's Street From Label: 596 RIVER ROAD
Mfg's P.O. Box From Label: N/K
Mfg's City From Label: EDGEWATER
Mfg's State From Label: NJ
Mfg's Zip Code From Label: 07020-1105
Mfg's Country From Label: US
Emergency Ph. No. From Label: 201-945-9400
```

Year Procured: N/K

DOD Hazardous Materials Information System DOD 6050.5-L

AS OF November 1992

FSC: 8010

NIIN: 005824743

Manufacturer's CAGE: OFTT5

Part No. Indicator: A

Part Number/Trade Name: SO-SURE OBLITERATING COMPOUND BROWN 30277

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: AEROSOL, PAINT, RUBBER, EXTERIOR

Manufacturer's Name: LHB INDUSTRIES

Manufacturer's Street: 8833 FLEISCHER PLACE

Manufacturer's P. O. Box: N/K

Manufacturer's City: BERKELEY

Manufacturer's State: MO

Manufacturer's Country: US

Manufacturer's Zip Code: 63134

Manufacturer's Emerg Ph #: 314-522-3141

Manufacturer's Info Ph #: 314-522-3141

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: G

Record No. For Safety Entry: 001

Tot Safety Entries This Stk#: 007

Status: SM

Date MSDS Prepared: 12MAR90

Safety Data Review Date: 22JUN90

Supply Item Manager: GSA

MSDS Preparer's Name: S. WENGER & E. LANSER

Preparer's Company: LHB INDUSTRIES

Preparer's St Or P. O. Box: 8833 FLEISCHER PLACE

Preparer's City: BERKELEY

Preparer's State: MO

Preparer's Zip Code: 63134

Other MSDS Number:

MSDS Serial Number: BHTSF

Specification Number: CID A-A-1801

Spec Type, Grade, Class: N/K

Hazard Characteristic Code:

Unit Of Issue: PT

Unit Of Issue Container Qty: 1 PT CAN

Type Of Container: METAL

Net Unit Weight: N/K

me !

NRC/State License Number: N/K Net Explosive Weight: N/K Net Propellant Weight-Ammo: N/K Coast Guard Ammunition Code: N/K _____ Ingredients/Identity Information Proprietary: NO Ingredient: TOLUENE (SARA III) Ingredient Sequence Number: 01 Percent: 10-30 Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: XS5250000 CAS Number: 108-88-3 OSHA PEL: 50 PPM; 9293 ACGIH TLV: 100 PPM/150 STEL Other Recommended Limit: 1.2 LEL -----Proprietary: NO Ingredient: TITANIUM DIOXIDE Ingredient Sequence Number: 02 Percent: <5 Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: XR2275000 CAS Number: 13463-67-7 OSHA PEL: 10 MG/M3 TDUST ACGIH TLV: 10 MG/M3 TDUST; 9192 Other Recommended Limit: NOT ESTABLISHED -----Proprietary: NO Ingredient: MAGNESIUM SILICATE Ingredient Sequence Number: 03 Percent: 5-15 Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: 1004604MS CAS Number: N/K OSHA PEL: N/K ACGIH TLV: 2 MG/M3 Other Recommended Limit: NOT ESTABLISHED -----Proprietary: NO Ingredient: ETHYL ALCOHOL (ETHANOL) Ingredient Sequence Number: 04 Percent: <5 Ingredient Action Code: Ingredient Focal Point: G NIOSH (RTECS) Number: KQ6300000 CAS Number: 64-17-5

OSHA PEL: 1000 PPM ACGIH TLV: 1000 PPM; 9192

Other Recommended Limit: 3.3 LEL -----

Proprietary: NO

Ingredient: ACETONE (SARA III)

rape_district Max and Case.

```
Ingredient Sequence Number: 05
Percent: <5
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: AL3150000
CAS Number: 67-64-1
OSHA PEL: 750PPM/1000 STEL
ACGIH TLV: 750PPM/1000STEL;9192
Other Recommended Limit: .8 LEL
-----
Proprietary: NO
Ingredient: VM & P NAPHTHA (VAPOR PRESSURE 15.0 MMHG @ 20C)
Ingredient Sequence Number: 06
Percent: <5
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: DE3030000
CAS Number: 8030-30-6
OSHA PEL: N/K
ACGIH TLV: 300 PPM
Other Recommended Limit: .9 LEL
Proprietary: NO
Ingredient: ACETONE (SARA III)
Ingredient Sequence Number: 07
Percent: 10-20
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: AL3150000
CAS Number: 67-64-1
OSHA PEL: 750PPM/1000 STEL
ACGIH TLV: 750PPM/1000STEL;9192
Other Recommended Limit: 2.6 LEL
-----
Proprietary: NO
Ingredient: TOLUENE (SARA III)
Ingredient Sequence Number: 08
Percent: 10-20
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: XS5250000
CAS Number: 108-88-3
OSHA PEL: 50 PPM; 9293
ACGIH TLV: 100 PPM/150 STEL
Other Recommended Limit: 1.2 LEL
-----
Proprietary: NO
Ingredient: PROPANE
Ingredient Sequence Number: 09
Percent: 64
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: TX2275000
CAS Number: 74-98-6
OSHA PEL: 1000 PPM
ACGIH TLV: ASPHYXIANT; 9192
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Other Recommended Limit: NOT ESTABLISHED

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Proprietary: NO
Ingredient: ISOBUTANE
Ingredient Sequence Number: 10
Percent: 14
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: TZ4300000
CAS Number: 75-28-5
OSHA PEL: N/K
ACGIH TLV: 800
Other Recommended Limit: NOT ESTABLISHED
------
Proprietary: NO
Ingredient: BUTANE
Ingredient Sequence Number: 11
Percent: 22
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: EJ4200000
CAS Number: 106-97-8
OSHA PEL: 800 PPM
ACGIH TLV: 800 PPM; 9192
Other Recommended Limit: NOT ESTABLISHED
______
                Physical/Chemical Characteristics
______
Appearance And Odor: N/K
Boiling Point: <0F, <-18C
Melting Point: N/K
Vapor Pressure (MM Hg/70 F): N/K
Vapor Density (Air=1): > THAN AIR
Specific Gravity: N/K
Decomposition Temperature: N/K
Evaporation Rate And Ref: FASTER THAN ETHER
Solubility In Water: N/K
Percent Volatiles By Volume: 85
Viscosity: N/K
pH: N/K
Radioactivity: N/K
Form (Radioactive Matl): N/K
Magnetism (Milligauss): N/K
Corrosion Rate (IPY): N/K
Autoignition Temperature: 874 F
______
                 Fire and Explosion Hazard Data
______
Flash Point: NR
Flash Point Method: NR
Lower Explosive Limit: 0.9
Upper Explosive Limit: N/K
Extinguishing Media: CARBON DIOXIDE, DRY CHEMICAL OR FOAM.
Special Fire Fighting Proc: WATER MAY BE INEFFECTIVE. WATER MAY BE USED TO
KEEP FIRE EXPOSED CONTAINERS COOL.
Unusual Fire And Expl Hazrds: DO NOT SPRAY NEAR OPEN FLAME. KEEP AT ROOM
TEMPERATURE AS EXPOSURE TO DIRECT SUNLIGHT OR OTHER HEAT MAY CAUSE
BURSTING.
```

Reactivity Data

Stability: YES

Cond To Avoid (Stability): HIGH TEMPERATURES.

Materials To Avoid: N/K

Hazardous Decomp Products: CARBON MONOXIDE, CARBON DIOXIDE AND POSSIBLE

HYDROGEN CHLORIDE

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): N/K

Health Hazard Data

LD50-LC50 Mixture: N/K

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: REPORTS HAVE ASSOCIATED REPEATED & PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN & NERVOUS SYSTEM DAMAGE. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING & INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Carcinogenicity - NTP: N/K

Carcinogenicity - IARC: N/K

Carcinogenicity - OSHA: N/K

Explanation Carcinogenicity: N/K

Signs/Symptoms Of Overexp: IN A CONFINED AREA, VAPORS IN HIGH CONCENTRATION ARE ANESTHETIC. IRRITATION TO SKIN & RESPIRATORY TRACT. OVEREXPOSURE MAY RESULT IN LIGHT-HEADEDNESS, STAGGERING GAIT, GIDDINESS & POSSIBLE NAUSEA, HARMFUL OR FATAL IF SWALLOWED.

Med Cond Aggravated By Exp: N/K

Emergency/First Aid Proc: INHALATION: MOVE PERSON TO WELL VENTILATED AREA. RESTORE BREATHING. GET MEDICAL ATTENTION. SKIN CONTACT: WIPE WITH CLEAN CLOTH, WASH THOROUGHLY WITH SOAP & WATER. EYE CONTACT: FLUSH THOROUGHLY WITH WATER, GET MEDICAL ATTENTION. INGESTION: GET MEDICAL ATTENTION IMMEDIATELY. DO NOT INDUCE VOMITING.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: REMOVE ALL SOURCES OF IGNITION. VENTILATE

AREA. MOP SPILLS WITH INERT ABSORBENT. AVOID BREATHING VAPORS.

Neutralizing Agent: N/K

Waste Disposal Method: DISPOSE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS. DO NOT INCINERATE CLOSED CONTAINERS.

Precautions-Handling/Storing: STORE BELOW 120 DEG F. KEEP CONTAINERS CLOSED & AWAY FROM HEAT & OPEN FLAME OR STORAGE IN DIRECT SUNLIGHT.

Other Precautions: DO NOT PUNCTURE OR INCINERATE CONTAINER. AVOID PROLONGED BREATHING OF VAPORS OR SPRAY MIST. DO NOT SPRAY NEAR OPEN FLAME OR FIRE. KEEP AWAY FROM CHILDREN.

Control Measures

Respiratory Protection: AVOID BREATHING OF VAPORS OR SPRAY MIST. IF NECESSARY, USE NIOSH/MSHATC-23C OR EQUIVALENT.

Eye Protection: SAFETY GLASSES W/UNPERFORATED SIDESHIELD

Ventilation: PROVIDE LOCAL EXHAUST VENT (EXPLOSION PROOF) IN VOL/PATTERN TO KEEP TLV/LEL OF HAZARDOUS INGREDIENTS BELOW STATED LIMITS Protective Gloves: RECOMMENDED FOR PROLONG/REPEATED CONTACT

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Other Protective Equipment: EXPLOSION PROOF LIGHTING AND VENTILATING
EQUIPMENT.
Work Hygienic Practices: N/K
Suppl. Safety & Health Data: N/K
Transportation Data
Transportation Action Code:
Transportation Focal Point: G
Trans Data Review Date: 90173
DOT PSN Code: DTJ
DOT Proper Shipping Name: CONSUMER COMMODITY
DOT Class: ORM-D
DOT Label: NONE
Limited Quantity: NO
DOT Mode Indicator:
Identification Number:
Reportable Qty - Trans File: NO
DOT/DoD Exemption Number: N/K
IMO PSN Code: AKH
IMO Proper Shipping Name: AEROSOLS/AEROSOL PRODUCT
IMO Regulations Page Number: SEE 9022
IMO UN Number: 1950
IMO UN Class: 9
IMO Subsidiary Risk Label:
IATA PSN Code: ALS
IATA UN ID Number: 1950
IATA Proper Shipping Name: AEROSOLS, FLAMMABLE, N.O.S.
IATA UN Class: 2
IATA Subsidiary Risk Class: 3
IATA Label: FLAMMABLE GAS
AFR 71-4 PSN Code: CZQ
AFR 71-4 Prop. Shipping Name: CONSUMER COMMODITY
AFR 71-4 Class: ORM-D
AFR 71-4 Label: NONE
AFR 71-4 ID Number:
AF MMAC Code: NK
Tech Entry NOS Shipping Name: CONSUMER COMMODITY
Additional Trans Data: N/K
Disposal Data
_____
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
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2nd EPA Acute Hazard UnUsed:

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3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
_______
                             Label Data
_______
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: G
Common Name of Product: SO-SURE OBLITERATING COMPOUND BROWN 30277
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: REPORTS HAVE ASSOCIATED REPEATED & PROLONGED
OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN & NERVOUS SYSTEM
DAMAGE. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING & INHALING THE
CONTENTS MAY BE HARMFUL OR FATAL. IN A CONFINED AREA, VAPORS IN HIGH
CONCENTRATION ARE ANESTHETIC. IRRITATION TO SKIN & RESPIRATORY TRACT.
OVEREXPOSURE MAY RESULT IN LIGHT-HEADEDNESS, STAGGERING GAIT, GIDDINESS &
POSSIBLE NAUSEA, HARMFUL OR FATAL IF SWALLOWED.
Protect Eye:
Protect Skin:
Protect Respiratory:
Mfg's Name From Label: LHB INDUSTRIES
Mfg's Street From Label: 8833 FLEISCHER PLACE
Mfg's P.O. Box From Label: N/K
Mfg's City From Label: BERKELEY
Mfg's State From Label: MO
Mfg's Zip Code From Label: 63134
Mfg's Country From Label: US
Emergency Ph. No. From Label: 314-522-3141
Year Procured:
```

DOD Hazardous Materials Information System DOD 6050.5-L

AS OF November 1992 FSC: 6850 NIIN: 00F016881 Manufacturer's CAGE: 10136 Part No. Indicator: A Part Number/Trade Name: 5-56 (AEROSOL) 5004 ______ Nuclear Water Data ______ This is not a Nuclear Water Chemical NIIN. ------General Information ______ Item Name: Manufacturer's Name: CRC CHEMICALS Manufacturer's Street: 885 LOUIS DRIVE Manufacturer's P. O. Box: N/K Manufacturer's City: WARMINSTER Manufacturer's State: PA Manufacturer's Country: Manufacturer's Zip Code: 18974 Manufacturer's Emerg Ph #: (215) 674-4300 Manufacturer's Info Ph #: (215) 674-4300 Distributor/Vendor # 1: Distributor/Vendor # 1 Cage: Distributor/Vendor # 2: Distributor/Vendor # 2 Cage: Distributor/Vendor # 3: Distributor/Vendor # 3 Cage: Distributor/Vendor # 4: Distributor/Vendor # 4 Cage: Safety Data Action Code: Safety Focal Point: F Record No. For Safety Entry: 001 Tot Safety Entries This Stk#: 001 Status: Date MSDS Prepared: 01NOV85 Safety Data Review Date: 16JUL91 Supply Item Manager: MSDS Preparer's Name: A.B. REED Preparer's Company: CRC CHEMICALS Preparer's St Or P. O. Box: 885 LOUIS DRIVE Preparer's City: WARMINSTER Preparer's State: PA Preparer's Zip Code: 18974 Other MSDS Number: MSDS Serial Number: BKTPD

Specification Number: Spec Type, Grade, Class: Hazard Characteristic Code:

Unit Of Issue Container Qty:

Unit Of Issue:

Type Of Container: Net Unit Weight:

F

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NRC'State License Number: Net Explosive Weight: Net Propellant Weight-Ammo: Coast Guard Ammunition Code: ______ Ingredients/Identity Information Proprietary: NO Ingredient: HYDROTREATED LIGHT DISTILLATE, PETROLEUM; C12-C15 ISOPARAFFINIC HYDROCARBONS Ingredient Sequence Number: 01 Percent: 53% Ingredient Action Code: Ingredient Focal Point: F NIOSH (RTECS) Number: 1002846HL CAS Number: 64742-47-8 OSHA PEL: 500 PPM ACGIH TLV: 100 PPM Other Recommended Limit: 300 PPM (MFR) -----Proprietary: NO Ingredient: PROPANE Ingredient Sequence Number: 02 Percent: <28% Ingredient Action Code: Ingredient Focal Point: F NIOSH (RTECS) Number: TX2275000 CAS Number: 74-98-6 OSHA PEL: 1000 PPM ACGIH TLV: ASPHYXIANT; 9192 Other Recommended Limit: 1800 MG/CUM -----Proprietary: NO Ingredient: ISOBUTANE, 2-METHYLPROPANE Ingredient Sequence Number: 03 Percent: <28% Ingredient Action Code: Ingredient Focal Point: F NIOSH (RTECS) Number: TZ4300000 CAS Number: 75-28-5 OSHA PEL: 1800 MG/CUM ACGIH TLV: 1000 PPM Other Recommended Limit: 1000 PPM -----Proprietary: NO Ingredient: PARAFFINIC OIL Ingredient Sequence Number: 04 Percent: 19% Ingredient Action Code: Ingredient Focal Point: F NIOSH (RTECS) Number: 1003374IP CAS Number: NONE OSHA PEL: 5 MG/CUM ACGIH TLV: N/K Other Recommended Limit: N/K

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Physical/Chemical Characteristics
 ______
 Appearance And Odor: AMBER LIQUID W/PLEASANT ODOR.
 Boiling Point: 380F
 Melting Point: N/K
 Vapor Pressure (MM Hg/70 F): 0.23
 Vapor Density (Air=1): >AIR
 Specific Gravity: 0.8167
 Decomposition Temperature: N/K
 Evaporation Rate And Ref: (TOLUENE = 1): 0.01
 Solubility In Water: NEGLIGIBLE
 Percent Volatiles By Volume: 82%
 Viscosity:
 pH: N/K
 Radioactivity:
 Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY): N/K
Autoignition Temperature:
Fire and Explosion Hazard Data
______
Flash Point: 175F
Flash Point Method: COC
Lower Explosive Limit: 1.8%
Upper Explosive Limit: 9.5%
Extinguishing Media: CO2, DRY CHEMICAL, OR FOAM
Special Fire Fighting Proc: N/K
Unusual Fire And Expl Hazrds: AEROSOL PROPELLENT QUICKLY DISSIPATES AFTER
THE APPLICATION. AEROSOL CANS MAY EXPLODE IF THEIR CONTENTS ARE HEATED
>130F. FLAMMABLE LIQUID.
-----
                       Reactivity Data
______
Stability: YES
Cond To Avoid (Stability): SOURCES OF IGNITION & TEMPS>130F.
Materials To Avoid: STRONG OXIDIZING AGENTS
Hazardous Decomp Products: CO OR CO2
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): N/K
______
                     Health Hazard Data
______
LD50-LC50 Mixture: N/K
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: YES
Health Haz Acute And Chronic: EYES: BURNING & IRRITATION. SKIN: DRYING &
DERMATITIS. INHALATION: BREATHING PROBLEMS, HEADACHES & NAUSEA. INGESTION:
HARMFUL.
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NONE
Signs/Symptoms Of Overexp: EYES: BURNING & IRRITATION. SKIN: DRYING,
DERMATITIS. INHALATION: BREATHING PROBLEMS, HEADACHES & NAUSEA. INGESTION:
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HAPMFUL.

Med Cond Aggravated By Exp: N/K

Emergency/First Aid Proc: INHALATION: REMOVE TO FRESH AIR. APPLY ARTIFICIAL RESPIRATION IF NECESSARY. EYES: FLUSH W/LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINS. SKIN: WASH W/SOAP & WATER. INGESTION: DON'T INDUCE VOMITING. OBTAIN MEDICAL ATTENTION IN ALL CASES.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: USUALLY NOT AN AEROSOL PROBLEM. VENTILATE AREA. REMOVE SOURCES OF IGNITION. USE ABSORBENT TO PICK UP WASTE MATERIAL. Neutralizing Agent: N/K

Waste Disposal Method: DISCARDED FILLED CANS OR PARTIALLY USED CANS ARE HAZARDOUS WASTE. OBSERVE FEDERAL, STATE & LOCAL REGULATIONS. FLAMMABLE LIQUID.

Precautions-Handling/Storing: STORE IN A COOL DRY PLACE. AVOID CONTACT W/SKIN.

Other Precautions: N/K

Control Measures

Respiratory Protection: USE NIOSH APPROVED MASK FOR HIGH MIST CONCENTRATION.

Ventilation: PROVIDE ADEQUATE VENTILATION TO KEEP <TLV.

Protective Gloves: OIL RESISTANT

Eye Protection: SAFETY GLASSES

Other Protective Equipment: NOT NORMALLY RECOMMENDED FOR AEROSOL USE. Work Hygienic Practices: REMOVE/LAUNDER CONTAMINATED CLOTHING BEFORE REUSE.

Suppl. Safety & Health Data: THIS PRODUCT DISSOLVES IN MOST ORGANIC SOLVENTS.

Transportation Data

Transportation Action Code: Transportation Focal Point:

Trans Data Review Date:

DOT PSN Code:

DOT Proper Shipping Name:

DOT Class:

DOT Label:

Limited Quantity:

DOT Mode Indicator:

Identification Number:

Reportable Qty - Trans File:

DOT/DoD Exemption Number:

IMO PSN Code:

IMO Proper Shipping Name:

IMO Regulations Page Number:

IMO UN Number:

IMO UN Class:

IMO Subsidiary Risk Label:

IATA PSN Code:

IATA UN ID Number:

IATA Proper Shipping Name:

IATA UN Class:

IATA Subsidiary Risk Class:

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IATA Label:
 AFR 71-4 PSN Code:
 AFR 71-4 Prop. Shipping Name:
 AFR 71-4 Class:
 AFR 71-4 Label:
 AFR 71-4 ID Number:
 AF MMAC Code:
 Tech Entry NOS Shipping Name:
 Additional Trans Data:
 ______
                         Disposal Data
 Disposal Data Action Code:
 Disposal Data Focal Point:
 Disposal Data Review Date:
 Rec # For This Disp Entry:
 Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
______
                           Label Data
______
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: G
Common Name of Product: 5-56 (AEROSOL) 5004
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
```

Reactivity Hazard-None: Reactivity Hazard-Slight: Reactivity Hazard-Moderate:

Reactivity Hazard-Severe:

Special Hazard Precautions: EYES: BURNING & IRRITATION. SKIN: DRYING & DERMATITIS. INHALATION: BREATHING PROBLEMS, HEADACHES & NAUSEA. INGESTION: HARMFUL. EYES: BURNING & IRRITATION. SKIN: DRYING, DERMATITIS. INHALATION: BREATHING PROBLEMS, HEADACHES & NAUSEA. INGESTION: HARMFUL.

Protect Eye:

Protect Skin:

Protect Respiratory:

Mfg's Name From Label: CRC CHEMICALS

Mfg's Street From Label: 885 LOUIS DRIVE

Mfg's P.O. Box From Label: N/K

Mfg's City From Label: WARMINSTER

Mfg's State From Label: PA

Mfg's Zip Code From Label: 18974

Mfg's Country From Label:

Emergency Ph. No. From Label: (215) 674-4300

Year Procured:

TMDE

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 7930

NIIN: 010645179

Manufacturer's CAGE: 18598

Part No. Indicator: A

Part Number/Trade Name: MS 260 CLEANER FOR PLASTIC, GLASS, METAL

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: GLASS CLEANER

Manufacturer's Name: MILLER-STEPHENSON CHEMICAL CO INC.

Manufacturer's Street: GEORGE WASHINGTON HIGHWAY

Manufacturer's P. O. Box: 950

Manufacturer's City: DANBURY

Manufacturer's State: CT

Manufacturer's Country: US

Manufacturer's Zip Code: 06810

Manufacturer's Emerg Ph #: 203-797-2212 OR 203-743-4447

Manufacturer's Info Ph #: 203-743-4447

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code:

Safety Focal Point: D

Record No. For Safety Entry: 001

Tot Safety Entries This Stk#: 001

Status: SM

Date MSDS Prepared: 01JAN89

Safety Data Review Date: 20FEB90

Supply Item Manager: 75

MSDS Preparer's Name: JANET STEPHENS

Preparer's Company:

Preparer's St Or P. O. Box:

Preparer's City:

Preparer's State:

Preparer's Zip Code:

Other MSDS Number:

MSDS Serial Number: BHJKD

Specification Number: N/R

Spec Type, Grade, Class: N/R

Hazard Characteristic Code: F1

Unit Of Issue: CN

Unit Of Issue Container Qty: N/K Type Of Container: AEROSOL CAN

Net Unit Weight:

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NRC/State License Number: N/R
Net Explosive Weight:
Net Propellant Weight-Ammo: N/R
Coast Guard Ammunition Code:
______
                 Ingredients/Identity Information
_____
Proprietary: NO
Ingredient: ETHYL ALCOHOL (ETHANOL)
Ingredient Sequence Number: 01
Percent: 20.0
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: KQ6300000
CAS Number: 64-17-5
OSHA PEL: 1000 PPM
ACGIH TLV: 1000 PPM; 9192
Other Recommended Limit: NOT ESTABLISHED
______
Proprietary: NO
Ingredient: LPG (LIQUEFIED PETROLEUM GAS)
Ingredient Sequence Number: 02
Percent: 5.0
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: SE7545000
CAS Number: 68476-85-7
OSHA PEL: 1000 PPM
ACGIH TLV: 1000 PPM; 9192
Other Recommended Limit: NOT ESTABLISHED
_____
Proprietary: NO
Ingredient: 2-BUTOXYETHANOL
Ingredient Sequence Number: 03
Percent: 5.0
Ingredient Action Code:
Ingredient Focal Point: D
NIOSH (RTECS) Number: KJ8575000
CAS Number: 111-76-2
OSHA PEL: S, 25 PPM
ACGIH TLV: S, 25 PPM; 9192
Other Recommended Limit: NOT ESTABLISHED
______
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Proprietary: NO

Ingredient: OTHER COMPONENTS (TYPE NOT SPECIFIED)

Ingredient Sequence Number: 04

Percent: N/K

Ingredient Action Code: Ingredient Focal Point: D NIOSH (RTECS) Number: 10032140C

CAS Number: UNKNOWN

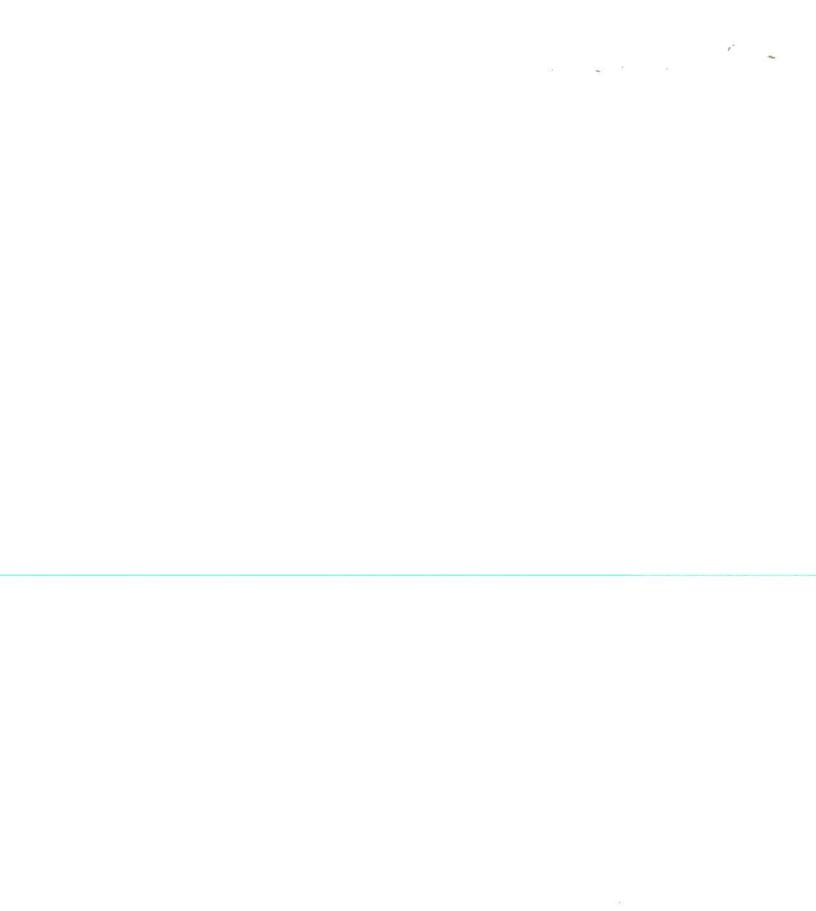
OSHA PEL: NOT ESTABLISHED ACGIH TLV: NOT ESTABLISHED

Other Recommended Limit: NOT ESTABLISHED

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Physical/Chemical Characteristics
 Appearance And Odor: WHITE FOAM, FLORAL FRAGRANCE
 Boiling Point: N/K
Melting Point: N/K
 Vapor Pressure (MM Hg/70 F): 30 MMHG
 Vapor Density (Air=1): >1.0
Specific Gravity: 0.95
Decomposition Temperature: N/K
Evaporation Rate And Ref: <1.0(N-BUTYL ACETATE = 1)
Solubility In Water: MISCIBLE
Percent Volatiles By Volume: 100.0
Viscosity:
pH: 8.5
Radioactivity:
Form (Radioactive Matl):
Magnetism (Milligauss):
Corrosion Rate (IPY):
Autoignition Temperature:
Fire and Explosion Hazard Data
______
Flash Point: N/K
Flash Point Method: N/K
Lower Explosive Limit: N/K
Upper Explosive Limit: N/K
Extinguishing Media: USE CARBON DIOXIDE, FOAM, DRY CHEMICAL, OR WATER FOG.
Special Fire Fighting Proc: FIRE FIGHTERS SHOULD USE NIOSH APPROVED SCBA &
FULL PROTECTIVE EQUIPMENT WHEN FIGHTING CHEMICAL FIRE. USE WATER SPRAY TO
COOL NEARBY CONTAINERS EXPOSED TO FIRE.
Unusual Fire And Expl Hazrds: CONTAINERS MAY BURST. AVOID EXTREME HEAT.
______
                       Reactivity Data
-----
Stability: YES
Cond To Avoid (Stability): HIGH TEMPERATURES, SPARKS, AND OPEN FLAMES
Materials To Avoid: NONE WITH COMMON MATERIALS.
Hazardous Decomp Products: CARBON MONOXIDE, CARBON DIOXIDE AND OTHER
UNIDENTIFIED COMPONENTS.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NOT APPLICABLE
Health Hazard Data
______
LD50-LC50 Mixture: N/K
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: YES
Health Haz Acute And Chronic: ACUTE: IRRITATION OF EYES, SKIN, RESPIRATORY OR
G.I.TRACTS; CNS EFFECTS LIKE HEADACHE, DIZZINESS, NAUSEA, VOMITING; REDNESS OR
BURNS OF EYES/SKIN POSSIBLE. CHRONIC: DRYING OF SKIN, DEFATTING OR DERMATITIS
POSSIBLE, NO DATA
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
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Explanation Carcinogenicity: DATA PER MSDS



Signs/Symptoms Of Overexp: SEE HEALTH HAZARDS DATA.

Med Cond Aggravated By Exp: PERSONS WITH A HISTORY OF AILMENTS OR WITH A PRE-EXISTING DISEASE INVOLVING THE EYES, SKIN, OR RESPIRATORY TRACT MAY BE AT INCREASED RISK FROM EXPOSURE.

Emergency/First Aid Proc: INHALATION:REMOVE TO FRESH AIR. RESUSCITATE IF NOT BREATHING. GET MEDICAL ATTENTION. EYES:IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR 15 MINUTES HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION. SKIN: REMOVE CONTAMINATED CLOTHING. WASH WITH SOAP AND WATER. IF IRRITATION PERSISTS, GET MEDICAL ADVICE. INGESTION:DO NOT INDUCE VOMITING. GIVE NOTHING BY MOUTH IF UNCONSCIOUS. GET IMMEDIATE MEDICAL ATTENTION.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: USE PROPER PERSONAL PROTECTION; REMOVE ALL IGNITION SOURCES; VENTILATE THE AREA; CONTAIN FREE MATERIAL IF POSSIBLE; USE SUITABLE INERT ABSORBENT MATERIAL AND RECOVER FOR PROPER DISPOSAL IN AN APPROVED CONTAINER.

Neutralizing Agent: NOT APPLICABLE.

Waste Disposal Method: CONSULT LOCAL AUTHORITIES.DISPOSAL MUST BE MADE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.DO NOT PUNCTURE OR INCINERATE.KEEP TEMPERATURE BELOW 120F. Precautions-Handling/Storing: STORE IN A COOL AND DRY AREA.PROTECT CONTAINERS FROM PHYSICAL DAMAGE.DO NOT PUNCTURE OR INCINERATE; SHELF LIFE IS ONE YEAR.

Other Precautions: DO NOT TAKE INTERNALLY. DO NOT BREATHE MIST. AVOID PROLONGED OR REPEATED BREATHING OF VAPOR. AVOID CONTACT WITH EYES. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.

Control Measures

Respiratory Protection: NONE REQUIRED UNDER NORMAL USE AS DIRECTED; USE NIOSH/MSHA APPROVED RESPIRATOR FOR ORGANIC VAPORS/MIST AS REQUIRED IF ABOVE PEL/TLV.

Ventilation: LOCAL/GENERAL TO MAINTAIN PEL/TLV.

Protective Gloves: NEOPRENE, NITRILE, OR NATURAL RUBBER

Eye Protection: SAFETY GOGGLES WITH OPTIONAL FACE SHIELD

Other Protective Equipment: EYE WASH STATION, WORK CLOTHING AND APRON AS REQUIRED.

Work Hygienic Practices: OBSERVE GOOD PERSONAL HYGIENE PRACTICES AND RECOMMENDED PROCEDURES. DO NOT WEAR CONTAMINATED CLOTHING OR FOOTWEAR. Suppl. Safety & Health Data: AVOID PROLONGED OR REPEATED EXPOSURE. DO NOT GET ON SKIN OR IN EYES. DO NOT BREATHE VAPORS OR MISTS.

Transportation Data

Transportation Action Code: Transportation Focal Point: D Trans Data Review Date: 90051

DOT PSN Code: DTJ

DOT Proper Shipping Name: CONSUMER COMMODITY

DOT Class: ORM-D
DOT Label: NONE
Limited Quantity:
DOT Mode Indicator:
Identification Number:
Reportable Qty - Trans File:
DOT/DoD Exemption Number:

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IMO PSN Code: AIY
IMO Proper Shipping Name: AEROSOL DISPENSERS
IMO Regulations Page Number: 9022
IMO UN Number: 1950
IMO UN Class: 9
IMO Subsidiary Risk Label:
IATA PSN Code: ALS
IATA UN ID Number: 1950
IATA Proper Shipping Name: AEROSOLS, FLAMMABLE, N.O.S.
IATA UN Class: 2
IATA Subsidiary Risk Class: 3
IATA Label: FLAMMABLE GAS
AFR 71-4 PSN Code: CZQ
AFR 71-4 Prop. Shipping Name: CONSUMER COMMODITY
AFR 71-4 Class: ORM-D
AFR 71-4 Label: NONE
AFR 71-4 ID Number:
AF MMAC Code:
Tech Entry NOS Shipping Name:
Additional Trans Data: SHIPPING NAME PER MSDS; FLAMMABLE GAS
______
                          Disposal Data
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
______
                          Label Data
Label Required: YES
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: E
Common Name of Product:
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
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Acute Health Hazard-Severe:

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Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: VAPORS MAY CAUSE DIZZINESS OR SUFFOCATION.
CONTACT WITH LIQUID MAY CAUSE FROSTBITE. FIRE MAY PRODUCE IRRITATING OR
POISONOUS GASES.
Protect Eye:
Protect Skin:
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Protect Respiratory:

Mfg's Name From Label: MILLER-STEPHENSON CHEMICAL CO INC

Mfg's Street From Label: GEORGE WASHINGTON HWY

Mfg's P.O. Box From Label: 950 Mfg's City From Label: DANBURY

Mfg's State From Label: CT

Mfg's Zip Code From Label: 06810

Mfg's Country From Label: US Emergency Ph. No. From Label:

Year Procured:

DOD Hazardous Materials Information System DoD 6050.5-L

AS OF November 1992

FSC: 7930

NIIN: 009265280

Manufacturer's CAGE: 1A862

Part No. Indicator: B

Part Number/Trade Name: DETERGENT, GENERAL PURPOSE (SPRAY ON, WIPE

Nuclear Water Data

This is not a Nuclear Water Chemical NIIN.

General Information

Item Name: DETERGENT, GENERAL PURPOSE

Manufacturer's Name: THE LIGHTHOUSE OF HOUSTON

Manufacturer's Street: 3530 W DALLAS

Manufacturer's P. O. Box: N/K

Manufacturer's City: HOUSTON

Manufacturer's State: TX

Manufacturer's Country: US

Manufacturer's Zip Code: 77019

Manufacturer's Emerg Ph #: 713-260-2505

Manufacturer's Info Ph #: 713-527-9561

Distributor/Vendor # 1:

Distributor/Vendor # 1 Cage:

Distributor/Vendor # 2:

Distributor/Vendor # 2 Cage:

Distributor/Vendor # 3:

Distributor/Vendor # 3 Cage:

Distributor/Vendor # 4:

Distributor/Vendor # 4 Cage:

Safety Data Action Code: A

Safety Focal Point: G

Record No. For Safety Entry: 002

Tot Safety Entries This Stk#: 002

Status: FM

Date MSDS Prepared: 06FEB92

Safety Data Review Date: 21JUL92

Supply Item Manager: GSA

MSDS Preparer's Name: IAN SANGREE

Preparer's Company: THE LIGHTHOUSE OF HOUSTON

Preparer's St Or P. O. Box: 3530 W. DALLAS

Preparer's City: HOUSTON

Preparer's State: TX

Preparer's Zip Code: 77019

Other MSDS Number:

MSDS Serial Number: BNPTC

Specification Number: P-D-1747C

Spec Type, Grade, Class: CLASS 1

Hazard Characteristic Code: N/

Unit Of Issue: BX

Unit Of Issue Container Qty: *

Type Of Container: PLASTIC

Net Unit Weight: N/K

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NRC/State License Number: N/K
Net Explosive Weight: N/K
Net Propellant Weight-Ammo: N/K
Coast Guard Ammunition Code: N/K
______
                 Ingredients/Identity Information
______
Proprietary: NO
Ingredient: PROPYLENE GLYCOL T-BUTYL ETHER
Ingredient Sequence Number: 01
Percent: <6
Ingredient Action Code: A
Ingredient Focal Point: G
NIOSH (RTECS) Number: N/
CAS Number: 57018-52-7
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: NONE SPECIFIED
-----
Proprietary: NO
Ingredient: VERSENE 100 (CHELATING AGENT)
Ingredient Sequence Number: 02
Percent: <5
Ingredient Action Code: A
Ingredient Focal Point: G
NIOSH (RTECS) Number: AH5075000
CAS Number: 64-02-8
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: NONE SPECIFIED
______
Proprietary: NO
Ingredient: ALKOXYLATED LINEAR ALCOHOL
Ingredient Sequence Number: 03
Percent: <5
Ingredient Action Code: A
Ingredient Focal Point: G
NIOSH (RTECS) Number: 1003660PL
CAS Number: 52232-09-4
OSHA PEL: N/K
ACGIH TLV: 2 MG/M3
Other Recommended Limit: NONE SPECIFIED
Physical/Chemical Characteristics
-----
Appearance And Odor: WATER CLEAR, MILD ALCOHOL ODOR.
Boiling Point: 212F, 100C
Melting Point: 32.0F,0.0C
Vapor Pressure (MM Hg/70 F): < 1
Vapor Density (Air=1): > AIR
Specific Gravity: 1.0182
Decomposition Temperature: 212F, 100C
Evaporation Rate And Ref: 1CC/60HRS (70 DEG F)
Solubility In Water: COMPLETE
Percent Volatiles By Volume: 96.5
Viscosity: N/K
pH: 9.5-
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Radioactivity: N/K 10.5 Form (Radioactive Matl): N/K Magnetism (Milligauss): N/K Corrosion Rate (IPY): N/K Autoignition Temperature: N/K

Fire and Explosion Hazard Data

Flash Point: >200F,93C Flash Point Method: TCC Lower Explosive Limit: N/K Upper Explosive Limit: N/K

Extinguishing Media: WATER FOG, CO2, DRY CHEMICAL EXTINGUISHER, FOAM Special Fire Fighting Proc: FIRE FIGHTERS SHOULD BE EQUIPPED WITH SELF-

CONTAINED BREATHING APPARATUS AND TURN-OUT GEAR.

Unusual Fire And Expl Hazrds: N/K

Reactivity Data ______

Stability: YES

Cond To Avoid (Stability): STORE IN COOL DRY PLACE. KEEP FROM FREEZING. DO NOT USE ON AIRCRAFT SURFACES, INSIDE OF COOKING OR EATING SURFACES.

Materials To Avoid: OXIDIZING AGENTS

Hazardous Decomp Products: OXIDES OF CARBON, AND OTHER HYDROCARBONS

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): N/K

Health Hazard Data

LD50-LC50 Mixture: N/K

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: NO.

Health Haz Acute And Chronic: HEADACHES, DIZZINESS, NAUSEA AND VOMITING AND DIARHEA MAY OCCUR DUE TO PROLONGED INHALATION, PROLONGED SKIN ABSORPTION, OR FROM SWALLOWING. CONTACT WITH EYES MAY CAUSE EYE IRRITATION AND POSSIBLE CORNEAL INJURY. MAY CAUSE MUCOUS MEMBRANE IRRITATION.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: N/K

Signs/Symptoms Of Overexp: EXPOSURE TO SKIN DURING NORMAL USE MAY CAUSE SKIN IRRITATION. IF IRRITATION PERSISTS, DISCONTINUE USE AND CONTACT A PHYSICIAN. CONTACT WITH EYES MAY CAUSE EYE IRRITATION.

Med Cond Aggravated By Exp: MAY AGGRAVATE PRE-EXISTING SKIN CONDITIONS. Emergency/First Aid Proc: EYE-REMOVE ANY CONTACT LENSES AND FLUSH WITH WATER FOR 15 MINUTES. IF SWALLOWED, DRINK TWO GLASSES OF WATER AND INDUCE VOMITING. GET MEDICAL ATTENTION IMMEDIATELY. PROLONGED EXPOSURE TO SKIN MAY CAUSE CONTACT DERMITITIS (REDNESS AND SORENESS OF SKIN). CONTACT PHYSICIAN IF IRRITATION PERSISTS.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: FOR LARGE INDUSTRIAL SPILLS, STOP SPILL AT ONCE. CONTAIN SPILL BY DIKE OR OTHER MEANS, PUMP INTO SALVAGE TANK, WASH FLOOR WITH WATER.

Neutralizing Agent: N/K

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Waste Disposal Method: DISPOSE OF IN ACCORDANCE WITH LOCAL, COUNTY, STATE, AND FEDERAL REGULATIONS.

Precautions-Handling/Storing: KEEP CONTAINERS CLOSED. STORE IN COOL, DRY, WELL VENTILATED AREA.

Other Precautions: KEEP FROM FREEZING.

Control Measures

Respiratory Protection: NONE REQUIRED UNDER NORMAL USE, NIOSH CARTRIDGE RESPIRATOR IF VAPORS EXCEED TLV.

Ventilation: USE IN WELL VENTILATED AREA.

Protective Gloves: RUBBER OR BUTYL

Eye Protection: USE CHEMICAL GOGGLES.

Other Protective Equipment: IMPERVIOUS APRON & BOOTS TO MAINTAIN BELOW TLV.

Work Hygienic Practices: N/K Suppl. Safety & Health Data: N/K

Transportation Data

Transportation Action Code: A Transportation Focal Point: G Trans Data Review Date: 92203

DOT PSN Code: ZZZ

DOT Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION

DOT Class: N/R
DOT Label: N/R
Limited Quantity: NO
DOT Mode Indicator:

Identification Number: N/R
Reportable Qty - Trans File: NO
DOT/DoD Exemption Number: N/K

IMO PSN Code: ZZZ

IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION

IMO Regulations Page Number: N/R

IMO UN Number: N/R
IMO UN Class: N/R

IMO Subsidiary Risk Label: N/R

IATA PSN Code: ZZZ

IATA UN ID Number: N/R

IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION

IATA UN Class: N/R

IATA Subsidiary Risk Class: N/R

IATA Label: N/R

AFR 71-4 PSN Code: ZZZ

AFR 71-4 Prop. Shipping Name: NOT REGULATED FOR THIS MODE OF

TRANSPORTATION

AFR 71-4 Class: N/R AFR 71-4 Label: N/R AFR 71-4 ID Number: N/R

AF MMAC Code: NK

Tech Entry NOS Shipping Name: N/K Additional Trans Data: *48-16 OZ BX'S

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Disposal Data
Disposal Data Action Code:
Disposal Data Focal Point:
Disposal Data Review Date:
Rec # For This Disp Entry:
Tot Disp Entries This Stock#:
Landfill Ban Item:
Disposal Supplemental Data:
1st EPA Haz Wst Code UnUsed:
1st EPA Haz Wst Name UnUsed:
1st EPA Haz Wst Char UnUsed:
1st EPA Acute Hazard UnUsed:
2nd EPA Haz Wst Code UnUsed:
2nd EPA Haz Wst Name UnUsed:
2nd EPA Haz Wst Char UnUsed:
2nd EPA Acute Hazard UnUsed:
3rd EPA Haz Wst Code UnUsed:
3rd EPA Haz Wst Name UnUsed:
3rd EPA Haz Wst Char UnUsed:
3rd EPA Acute Hazard UnUsed:
______
                           Label Data
______
Label Required: YES *
Date of Technical Review:
Label Date:
Manufacturer's Label No .:
Label Status: G *
Common Name of Product: DETERGENT, GENERAL PURPOSE (SPRAY ON, WIPE *
Chronic Hazard:
Signal Word:
Acute Health Hazard-None:
Acute Health Hazard-Slight:
Acute Health Hazard-Moderate:
Acute Health Hazard-Severe:
Contact Hazard-None:
Contact Hazard-Slight:
Contact Hazard-Moderate:
Contact Hazard-Severe:
Fire Hazard-None:
Fire Hazard-Slight:
Fire Hazard-Moderate:
Fire Hazard-Severe:
Reactivity Hazard-None:
Reactivity Hazard-Slight:
Reactivity Hazard-Moderate:
Reactivity Hazard-Severe:
Special Hazard Precautions: HEADACHES, DIZZINESS, NAUSEA AND VOMITING AND
DIARHEA MAY OCCUR DUE TO PROLONGED INHALATION, PROLONGED SKIN ABSORPTION,
OR FROM SWALLOWING. CONTACT WITH EYES MAY CAUSE EYE IRRITATION AND POSSIBLE
CORNEAL INJURY. MAY CAUSE MUCOUS MEMBRANE IRRITATION. EXPOSURE TO SKIN
DURING NORMAL USE MAY CAUSE SKIN IRRITATION. IF IRRITATION PERSISTS,
DISCONTINUE USE AND CONTACT A PHYSICIAN. CONTACT WITH EYES MAY CAUSE EYE
IRRITATION. *
Protect Eye:
```

-4.3

Protect Skin:
Protect Respiratory:
Mfg's Name From Label: THE LIGHTHOUSE OF HOUSTON *
Mfg's Street From Label: 3530 W DALLAS *
Mfg's P.O. Box From Label: N/K *
Mfg's City From Label: HOUSTON *
Mfg's State From Label: TX *
Mfg's Zip Code From Label: 77019 *
Mfg's Country From Label: US *
Emergency Ph. No. From Label: 713-260-2505 *
Year Procured: