APPENDIX 2

MATERIAL SAFETY DATA SHEETS (MSDS)

Calcium Oxide
Ethanol
Hydrochloric Acid
Nitric Acid
Sodium Cyanide
Sodium Hypochlorite

Material Safety Data Sheets (MSDS)

Training Objectives:

- Locate and access the MSDS files.
- Read and understand basic information on an MSDS.
- Find information on a specific chemical.

PURPOSE:

1. To provide accurate detailed information on the hazards associated with operations and use of hazardous chemicals in the workplace. As provided by OSHA to inform employees so they can work in a safe and healthful environment.
2. To provide a source of detailed information on spill cleanup and personal protection.

Manufacturers and importers of hazardous materials are required by law to supply an MSDS to the users of their products.

Not all MSDS's look alike, but all of them contain information on nine key areas as specified by OSHA.

1. Material Identification
2. Hazardous Ingredients
3. Physical Data
4. Fire and Explosion Data
5. Health Hazard Data
6. Reactivity Data
7. Spill or leak procedures
8. Special protection information
9. Special precautions

1. MATERIAL IDENTIFICATION

- Name, address and emergency phone number of manufacturer
- Chemical name
- Common name or trade name

2. HAZARDOUS INGREDIENTS

- Lists all ingredients potentially hazardous
- Lists ingredients by percentage of total material
- Lists Threshold Limit Value (TLV) in part per million

  TLV - The amount of airborne material that an average person may be safely exposed to day after day eight hours a day. The lower the TLV the more hazardous a material is, because it takes a smaller amount to be harmful.

3. PHYSICAL DATA

- Appearance
- Odor
- Boiling point
- Vapor density
- Specific Gravity

VAPOR DENSITY - Lighter or heavier than air
AIR = 1.0

SPECIFIC GRAVITY - Lighter or heavier than water
WATER = 1.0

4. FIRE AND EXPLOSION HAZARDS

- Safe handling and storage
- Proper fire fighting procedures
- Any unusual hazards

5. HEALTH HAZARD DATA

- TLV
- Symptoms of exposure
- First aid procedures

6. REACTIVITY HAZARD DATA

- Conditions to avoid
  - Contamination
  - Decomposition
  - Temperature
  - Shock
  - Polymerization

7. SPILL AND CLEAN UP

- Proper cleanup and disposal methods
  - Dilution
  - Absorption
  - Neutralization
  - Some may not be washed down drainage systems
- Remove Ignition sources (flammable vapors)

8. SPECIAL PROTECTION

- Respiratory (supplied air, air purifying respirators)
- Eyes (goggles, face shield)
- Skin (gloves, boots, clothing)
- Ventilation

9. SPECIAL PRECAUTIONS

- Effected by sunlight
- Effected by freezing
- Does it have a shelf life?

Material Safety Data Sheets provide the knowledge necessary to make sound decisions for properly protecting yourself, keeping your work environment healthy and safe, and using the proper methods necessary to take care of injuries or clean up a spill in the event of an accident. If you are unsure about a product, get the MSDS and learn about the chemicals you are working with.

PETERS CHEMICAL COMPANY

MATERIAL SAFETY DATA SHEET

Product Name: Calcium Oxide (Pebble Lime, Quicklime, Burnt Lime)

EPA Reg. No: N/A

1. PRODUCT IDENTIFICATION

Product Name.....Pebble Lime (Calcium Oxide)

UN/MA#.....N/A

DOT Hazard Class.....N/A

2. TYPICAL CHEMICAL COMPOSITION

Recommended Exposure Limits

Hazardous Components	CAS Number	OSHA PEL	ACGIH TLV-TWA
		Mg/m^3	Mg/m^3
Calcium Oxide	1305-78-8	5	5
Magnesium Oxide	1309-48-4	10 (fume)	10 (fume)
Calcium Carbonate	1317-65-3	15	15
Silica	7631-86-9	80/(%SiO_2)	5

3. PHYSICAL DATA

Boiling Point.....5162F

Vapor Pressure.....N/A

Density.....N/A

pH.....Basic

Solubility in Water.....Appreciable, greater than 10%

Evaporation Rate.....N/A

Appearance and Odor.....White or Grayish - White pebble material - Odorless

4. FIRE AND EXPLOSION HAZARD DATA

Flash Point.....N/A

Flammable Limits.....N/A

Fire Extinguishing Media.....Considered non-combustible. Use media appropriate for surrounding fire.

Special Fire Fighting Procedures.....Avoid water unless necessary to use on other burning materials in which case the area should be flooded with water to absorb heat from the chemical reaction. Fire fighters should wear full protective clothing and self-contained breathing apparatus.

Unusual Fire and Explosion Hazards....Not combustible, but contact with water may generate sufficient heat from the chemical reaction to ignite combustible materials.

5. REACTIVITY DATA

Stability.....Stable

Incompatibility.....Acids, Boric Acid + Calcium Chloride (fused), Bromine Pentafluoride, Chlorine Trifluoride, Ethanol, Fluorine, Hydrogen Fluoride, Interhalogen compounds, Organic materials, and Phosphorus Pentoxide.

Hazardous Decomposition Products.....None expected

Hazardous Polymerization.....Will not occur

Conditions to Avoid..... N/A

6. SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released: In case of release to the environment, report spills to the National Response Center 1-800-424-8802

Suggested Local Action: Contain spill. Prevent large quantities from contacting vegetation or domestic and natural water sources. If material is not contaminated place in appropriate DOT approved containers for disposal.

Waste Disposal Method: (ERA Waste identification #: N/A) If contaminated with other materials, the nature and extent of contamination may require the

use of specialized disposal methods. If disposal is necessary, comply with alt local, state, and federal regulations. Contact your local EPA office for help. For Hazardous Waste Regulation: call 1-800-424-9346 - The RCRA Hotline.

7. HEALTH HAZARD DATA

Inhalation: Extremely high concentrations of dust are typically self-eliminated due to the nuisance conditions they create. Over exposure may produce irritation of the mucous membranes, nose, throat, coughing and shortness of breath. In addition it may contain small amounts of silica particles less than 5mm in diameter. These silica particles are capable of causing silicosis if inhaled in high enough concentrations over an extended period of time. The principal manifestation of silicosis if difficulty in breathing. This condition can progress to dry cough, shortness of breath on exertion, decreased lung function and pulmonary fibrosis.

Skin Contact: May cause irritation, particular on damp skin. Repeated or prolonged contact could lead to dermatitis. Wash affected area with mild soap and water.

Eye Contact: May cause irritation and conjunctivitis. Flush with large amounts of water for at least 15 minutes, while rolling eyeball and lifting eyelid. Get medical attention.

Ingestion: Give milk, egg whites, or water to drink. DO NOT induce vomiting. Get medical attention.

8. EMERGENCY AND FIRST AID PROCEDURE

Inhalation: Remove from exposure. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Immediately seek medical aid.

Skin Contact: Wash thoroughly with soap and water. Seed medical aid.

Eye Contact: Flush immediately with large amounts of water, lifting the lower and upper lids occasionally. Seed medical help.

Ingestion: Give 1 -2 large glasses of water or milk. Immediately seek medical aid. Never give liquids to an unconscious person.

Carcinogenicity: Not listed as a carcinogen by NTP, IARC, or OSHA.

Routes of Entry: Inhalation, Skin and Eye Contact if handled in such a manner that dust is generated.

Effects of Overexposure: As sold, this product is not anticipated to pose an acute or significant health hazard. However, if subjected to dust generating processes, adverse health effects may occur.

Calcium oxide is caustic to living tissue. Overexposure may cause irritation of the eyes, skin, and upper respiratory tract. Inflammation of the respiratory tract, ulceration and perforation of the nasal septum, bronchitis and pneumonia have also bee attributed to inhalation of calcium oxide dust. Eye contact may cause conjunctivitis, cornea) ulceration. Skin contact may cause skin inflammation and ulceration.

Medical Conditions Aggravated by Exposure: Chronic disease and disorders of the respiratory system and skin.

9. SPECIAL PROTECTION INFORMATION

Respiratory: Respiratory protection approved by NIOSH/MSHA for protection against dust should be used to avoid inhalation. Appropriate respiration selection depends on the type and magnitude of exposure.

Skin: Clean, body-covering clothing should be worn to prevent irritation in situation where direct contact with product may occur or dust levels are excessive.

Eyes: Employees should be required to wear chemical safety splash goggles in situations where direct contact with the product may result in eye injury.

Ventilation: Local exhaust ventilation should be used to control worker exposure to below recommended Permissible Exposure Levels (PEL).

Other Protective Equipment: Emergency eye wash stations and deluge safety showers should be available in the work areas.

10. SPECIAL PRECAUTIONS

Precaution to be taken in handling and storage: Store in a cool, dry location. Keep out of reach of children and pets.

THIS INFORMATION IS TAKEN FROM SOURCES OR BASED UPON DATE BELIEVED TO BE RELIABLE; HOWEVER, PETERS CHEMICAL COMPANY, MAKES NO WARRANTY AS TO THE ABSOLUTE CORRECTNESS OR SUFFICIENCY OF ANY OF THE FOREGOING OR THAT ADDITIONAL OR OTHER MEASURES MAY NOT BE REQUIRED UNDER PARTICULAR CONDITIONS. THIS DOCUMENT HAS BEEN PREPARED SOLELY FOR THE INTENT OF COMPLIANCE WITH THE PROVISION OF SUBPART 2 OF PART '1910 OF TITLE 29 OF THE CODE OF FEDERAL REGULATION, PARAGRAPH 1910.1200 AND CHAPTER 307 OR PART XIII OF THE PENNSYLVANIA WORKER AND COMMUNITY RIGHT TO KNOW ACT, SECTION 17 OF (P.I. 734, NO. 159)(35 P.S. &7317).

Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300

MATERIAL SAFETY DATA SHEETS

SECTION I
PRODUCT AND COMPANY IDENTIFICATION

Product: 90% Ethyl Alcohol
This MSDS is valid for all grades and catalog #'s

Synonyms: 180 Proof Ethyl Alcohol; Ethanol; Methylated Spirits
Formula: CH_3CH_2OH

Manufacturer: Pharmco Products Inc.
58 Vale Road
Brookfield, Connecticut 06804, USA
Phone (203) 740-3471
Fax (203) 740-3481

Emergency Contact:
CHEMTREC 1-800-424-9300

SECTION II
COMPOSITION /INFORMATION ON INGREDIENTS

%v/v	Material	CAS	Exposure Limits
85.69% (90%v/v)	Ethanol	64-17-5	1000ppm TWA
14.31%	Water	7732-18-5	None established

SECTION III
HAZARDS IDENTIFICATION

Carcinogen Status: Not classifiable as a human carcinogen
Routes of Exposure:
Swallowing: May cause dizziness, faintness, drowsiness decreased awareness or responsiveness, nausea, vomiting, staggering gait, lack of coordination, and coma
Skin Absorption: No harmful affects with normal skin.
Inhalation: High vapor concentration may cause burning sensation in nose and throat and stinging and watering in the eyes. At concentrations which cause irritation, dizziness, faintness, drowsiness, nausea and vomiting may also occur.
Skin Contact: No evidence of harmful effects from available information.
Eye Contact: May cause irritation including stinging, tearing, and redness
Effects of Repeated Overexposure: Long term repeated oral exposure to ethanol may result in the development of progressive liver injury with fibrosis
Other Health Hazards: Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects which together constitute fetal alcohol syndrome. These include mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioral disorders and small size head.

Medical Conditions Aggravated by Overexposure:
Repeated exposure to ethanol may aggravate liver injury produced from other causes.

SECTION IV FIRST AID

Obtain medical attention for all cases of over-exposure.
Swallowing: If patient is fully conscious, give two glasses of water. Induce vomiting. Obtain medical attention.
Skin: Wash skin with soap and water for at least 15 minutes
Inhalation: Remove to fresh air; Give artificial respiration if not breathing; If breathing is difficult oxygen may be given by qualified personnel; Obtain medical assistance is discomfort persists.
Note to Physician: Symptoms vary with alcohol level of the blood. Mild alcohol intoxication occurs at blood levels between 0.5-.15%. Approximately 25% of individuals show signs of intoxication at these levels. Above .15% the person is definitely under the influence of ethanol; 50-95% of individuals are clinically intoxicated at these levels. Severe poisoning occurs when the blood is ethanol level is 0.3- 0.5%. Above 0.5% the individual will be comatose and death can occur. The unabsorbed ethanol should be removed by gastric lavage after intubating the patient to prevent aspiration. Avoid the use of depressant drugs or the excessive administration of fluids.

SECTION V FIRE FIGHTING MEASURES

Fire/Explosive Properties
Flash Point: Approximately 64F / (18C) Tag Closed Cup
Approximately 75F / (24C) Tag Open Cup
Flammable Limits in Air for 100% Ethanol: 3.3 - 19.0% (by volume) *(limits for 90% solution not available)*
Flammability Classification: 3 (NFPA)
1993 Emergency Response Guidebook: Guide 26
1996 North American Emergency Response Guidebook: Guide 127
Extinguishing Media: Apply alcohol-type or all-purpose foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.
Special Fire Fighting Procedures: Use water spray to cool fire-exposed containers and structures; Use water spray to disperse vapors - re-ignition is possible; Use self-contained breathing apparatus and protective clothing
Unusual Fire and Explosion Hazards:

- Vapors may travel to source of ignition and flash back.
- Vapors may settle in low or confined spaces.
- May produce a floating fire hazard.
- Static ignition hazard can result from handling and use.

SECTION VI
SPILL/ACCIDENTAL RELEASE MEASURES

Small spills can be flushed with large amounts of water.
Large spills: Eliminate all ignition sources; ground all equipment; do not walk through spill; stop spill if possible; prevent entry into sewers, confined spaces, etc.; use a vapor suppressing foam to reduce vapors; absorb spill with non-combustible matter and transfer to containers; use non-sparking tools to collect absorbed material.

SECTION VII HANDLING AND STORAGE

- Flammable material - keep away from heat, sparks, and flame; sudden releases of hot organic vapors or mists from process equipment operating at elevated temperature may result in ignitions without the presence of obvious ignition sources.
- Avoid contact with eyes.
- Keep container closed.
- Use with adequate ventilation.
- Ground container when transferring product.
- Vapors may collect in containers; treat empty containers as hazardous.
- Wash thoroughly after handling
- Vapors may settle in low or confined areas

SECTION VIII EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Special, local ventilation is needed where vapors escape to the workplace air
Respiratory Protection: Use self-contained breathing apparatus in high vapor concentration
Personal Protective Equipment: gloves, lab coat or uniform, safety glasses, eye wash, safety shower

SECTION IX
PHYSICAL AND CHEMICAL PROPERTIES

Appearance: clear, colorless liquid
Odor: characteristic
Vapor pressure @ 20C: 44.6 mm Hg for 100% ethanol *(vapor pressure for 90% solution not available)*
Vapor density: 1.6 (air =1) for 100% ethanol *(vapor density for 90% solution not available)*
Boiling point @ 760mm Hg: approx. 80C
Freezing Point: approx. -55C
Solubility in Water: 100% @ 20C
Specific Gravity : 0.8336 @ 15.56C
Density @ 20.0°C (68F) 6.90 lb./gal
Evaporation Rate: 3.3 (butyl acetate – 1) for 100% ethanol *(evaporation rate for 90% not available)*

SECTION X
STABILITY/REACTIVITY INFORMATION

Stability: Stable
Conditions to avoid: None known
Incompatibility/Materials to avoid: strong oxidizing agents; strong inorganic acids
Hazardous Combustion/Decomposition Products: Carbon monoxide and/or carbon dioxide
Hazardous Polymerization: Will not occur

SECTION XI DISPOSAL CONSIDERATIONS

Vapors may collect in empty containers. Treat empty containers as hazardous.
Dispose of spill-clean up and other wastes in accordance with Federal, State, and local regulations.

SECTION XII TRANSPORTATION INFORMATION

DOT Information
Proper Shipping Name: Ethyl Alcohol
Hazard Class: 3
UN Number: 1170

IMO Information: Ethanol or ethanol solutions
Label of Class: 3
Packing Group II
Intermediate flashpoint group

SECTION XIII REGULATORY INFORMATION

Federal EPA

Comprehensive Environmental Response Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release quantities of Hazardous Substances equal to or greater than the reportable quantities (RQs) in CFR. Components present in this product at a level which could require reporting under this statute are:

Chemical	CAS Number	Upper Bound Conc. %
Acetaldehyde	75-07-0	.0016
Acetone	67-64-1	.0002
Methanol	67-56-1	.0120

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on threshold planning quantities and release reporting based on reportable quantities in 40 CFR 355 (used for SARA 302, 304, 311, and 312). Components present in this product at a level which could require reporting under this statute are: none.

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDS's that are copied and distributed for this material. Components present in this product at a level which could require reporting under the statute are: none.

Toxic Substances Control Act (TSCA) Status:
The ingredients of this product are on the TSCA inventory.

State Right to Know

California Proposition 65: This product contains trace levels of acetaldehyde known to the State of California to cause cancer.

Massachusetts: Hazardous substances and extraordinarily hazardous substances must be identified. Components present which could require reporting:
Extraordinarily Hazardous (=> 0.0001%): Acetaldehyde (CAS 75-07-0) upper bound conc. .0016%
Hazardous (=>1%): Ethanol (CAS 64-17-5) upper bound conc. 85.69%

Pennsylvania: Hazardous substances must be identified.
Hazardous (=>1%): Ethanol (CAS 64-17-5) upper bound conc. 85.69%
California SCAQMD Rule 443.1 (VOC's)
A Volatile Organic Compound (VOC) is any volatile compound of carbon excluding methane, carbon monoxide, carbonic acid, metallic carbides, or carbonates, ammonium carbonate, 1,1,1 tri-chloroethane, methylene chloride, (FC-23), (CFC-113), (CFC-12), (CFC-11), (CFC-22), (CFC-114) and (CFC-115).
VOC 790g/l; vapor pressure 44.6 mm Hg @20C for 100% ethanol *(VOC not available for 90% solution)*

The information contained herein is based on data considered to be accurate. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use of the product.

Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300 or 202-483-7616

MATERIAL SAFETY DATA SHEETS

Part Number/Trade Name: HYDROCHLORIC ACID
This MSDS is valid for all grades and catalog numbers

General Information

Company's Name: PHARMCO PRODUCTS, INC.
Company's Street: 58 VALE RD.
Company's City: BROOKFIELD
Company's State: CT
Company's Zip Code: 06804
Company's Emerg Ph #: (304) 740-3471
Company's Info Ph #: (203) 740-3471

Date MSDS Revised: Nishant 8/23/99
Safety Data Review Date: 8/23/99
Preparer's Company: PHARMCO PRODUCTS, INC.
Preparer's St Or P. O. Box: 58 VALE RD.
Preparer's City: BROOKFIELD
Preparer's State: CT
Preparer's Zip Code: 06804

Ingredients/Identity Information

Proprietary: NO
Ingredient: HYDROGEN CHLORIDE (HYDROCHLORIC ACID) (SARA III)
Percent: 37.0

NIOSH (RTECS) Number: MW4025000
CAS Number: 7647-01-0
OSHA PEL: C 5 PPM
ACGIH TLV: C 5 PPM; 9192

Physical/Chemical Characteristics

Appearance And Odor: COLORLESS OR SLIGHTLY YELLOW,FUMING,PUNGENT LIQUID
Boiling Point: 230F,110C
Vapor Pressure (MM Hg/70 F): 26
Vapor Density (Air=1): 1.2

Specific Gravity: 1.179
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: 1.0 (N-BUTYL ACETATE = 1)
Solubility In Water: APPRECIABLE
Percent Volatiles By Volume: 100

Fire and Explosion Hazard Data

Extinguishing Media: WATER FOG,CO2,DRY CHEMICAL
Special Fire Fighting Proc: USE NIOSH/MSHA APPROVED SCBA IN AN ENCLOSED AREA.
Unusual Fire And Expl Hazrds: MAY FORM TOXIC MATERIALS,HYDROGEN CHLORIDE,

ACID VAPORS.

Reactivity Data

Stability: YES
Cond To Avoid (Stability): EXTREME HEAT
Materials To Avoid: STRONG ALKALI METALS/ALKALIES

Hazardous Decomp Products: HCL GAS OR ACID VAPORS
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NONE NOTED

Health Hazard Data

Signs/Symptoms Of Overexp: EYES:SEVERE DAMAGE,BLINDNESS;SKIN:BURNS,DEEP ULCERATION;INHAL:DAMAGE TO NASAL& RESP.TRACT;ING:DAMAGE
Emergency/First Aid Proc: INHALE:REMOVE TO FRESH AIR, GIVE CPR/O2 IF NEED;EYES/SKIN:FLUSH W LG AMTS H2O FOR 15 MIN;INGEST:RINSE MOUTH; GET MEDICAL ATTENTION FOR EYES, BREATHING DIFFICULTY, OR OTHER SYMPTOMS OF OVEREXPOSURE.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: USE PROPER PERSONAL PROTECTION;DIKE THE AREA,RECOVER FREE LIQUID;COVER WITH SODA ASH AND RECOVER SLURRY FOR PROPER
DISPOSAL.
Waste Disposal Method: DISPOSE OF COLLECTED MATERIAL IN ACCORDANCE WITH LOCAL,STATE AND FEDERAL REGULATIONS.
Precautions-Handling/Storing: STORE IN COOL,DRY AND WELL VENTILATED AREA. USE CARE.USE PERSONAL PROTECTIVE CLOTHINGS.
Other Precautions: AVOID CONTACT WITH EYES AND SKIN;DO NOT BREATHE VAPORS. WASH THOROUGHLY AFTER EACH USE.DO NOT EAT,DRINK AND SMOKE IN WORK AREA.

Control Measures

Respiratory Protection: USE NIOSH/MSHA APPROVED RESPIRATOR FOR ACID MIST/ VAPOR IF ABOVE TLV.
Ventilation: PROVIDE MECHAN(GEN/LOCAL EXHAUST)VENT TO MAINTN <TLV
Protective Gloves: NEOPRENE
Eye Protection: GOGGLES/FACE SHIELD
Other Protective Equipment: FULL PROTECTIVE CLOTHING,SAFETY SHOWER,EYE WASH STATION
Suppl. Safety & Health Data: MSDS DATED:03/86.EFFECTS OF OVEREXP:DAMAGE TO MUCOUS MEMBRANES & DEEP TISSUES CAN RESULT IN DEATH.

Transportation Data

DOT PSN Code: HJG

DOT Proper Shipping Name: HYDROCHLORIC ACID, SOLUTION

DOT Class: 8
DOT ID Number: UN1789
DOT Pack Group: II
DOT Label: CORROSIVE
IMO PSN Code: IEX
IMO Proper Shipping Name:
HYDROCHLORIC ACID,SOLUTION
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 Label: CORROSIVE
AFI PSN Code: NPG
AFI Symbols: T
AFI Prop. Shipping Name: HYDROCHLORIC ACID, SOLUTION
AFI Class: 8
AFI ID Number: UN1789
AFI Pack Group: II
AFI Label: CORROSIVE
AFI Special Prov: A3,A6,N41
AFI Basic Pac Ref: 12-5

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Disposal Data

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Landfill Ban Item: YES
Disposal Supplemental Data: MSDS DATED:03/86.EFFECTS OF OVEREXP:DAMAGE TO MUCOUS MEMBRANES & DEEP TISSUES CAN RESULT IN DEATH. 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

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Label Data

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Special Hazard Precautions: CONTACT CAUSES BURNS TO SKIN AND EYES. IF INHALED, MAY BE HARMFUL. FIRE MAY PRODUCE IRRITATING OR POISONOUS GASES. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION.

The information contained herein is based on data considered to be accurate. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use of the product.

Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300 or 202-483-7616

MATERIAL SAFETY DATA SHEETS

Part Number/Trade Name: NITRIC ACID
This MSDS is valid for all grades and catalog numbers

General Information

Company's Name: PHARMCO PRODUCTS, INC.
Company's Street: 58 VALE RD.
Company's City: BROOKFIELD
Company's State: CT
Company's Zip Code: 06804
Company's Emerg Ph #: (203) 740-3471
Company's Info Ph #: (203) 740-3471

Date MSDS Revised: Nishant-8/23/99
Safety Data Review Date: 8/23/99
Preparer's Company: PHARMCO PRODUCTS, INC.
Preparer's St Or P. O. Box: 58 VALE RD.
Preparer's City: BROOKFIELD
Preparer's State: CT
Preparer's Zip Code: 06804

Ingredients/Identity Information

Ingredient: NITRIC ACID (SARA III)
Ingredient Sequence Number: 01
Percent: 70.5
NIOSH (RTECS) Number: QU5775000

CAS Number: 7697-37-2
OSHA PEL: 2 PPM/4 STEL
ACGIH TLV: 2 PPM/4 STEL; 9192

Physical/Chemical Characteristics

Appearance And Odor: COLORLESS LIQUID,PUNGENT ODOR
Boiling Point: 251.6F/122C
Vapor Pressure (MM Hg/70 F): 8
Vapor Density (Air=1): 1.58

Specific Gravity: 1.42
Evaporation Rate And Ref: <1(BUTYL ACETATE)
Solubility In Water: COMPLETE
Percent Volatiles By Volume: N/A

Fire and Explosion Hazard Data

Flash Point: N/A
Lower Explosive Limit: N/A
Upper Explosive Limit: N/A
Extinguishing Media: IF INVOLVED IN A FIRE,USE WATER SPRAY
Special Fire Fighting Proc: AVOID INHALE OF GAS.USE SELF-CNTND BRTHG

APP,FULL PROT EQUIP
Unusual Fire And Expl Hazrds: WILL INCREASE FLAMABILITY OF WOOD,ORGANICS.
CAUSES EXPLOS W H*2S,METAL POWDERS,CARBIDES,TURPENTINE.

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Reactivity Data

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Stability: YES
Materials To Avoid: METALS,H*2S,WOOD,EXCELSIOR,PAPER PRODUCTS,SIMILAR ORGANICS.
Hazardous Decomp Products: POISONOUS OXIDES OF NITROGEN(GASEOUS)
Hazardous Poly Occur: NO

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Health Hazard Data

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Signs/Symptoms Of Overexp: SEVER BURNS TO EYES,SKIN.INHALE OF VAPOR DAMAGES RESPIR TRACT.SYMPTOMS MAY BE DELAYED.ING:CAN B.FATL
Emergency/First Aid Proc: SKIN:FLUSH WITH PLENTY WATER.EYES:FLUSH W WATER 15 MIN.GET IMMEDIATE MEDICAL ATTENTION.IF INHALED:REMOVE TO FRESH AIR,GET IMMEDIATE MEDICAL ATTENTION.INGESTION:DRINK LG VOL OF WATER TO DILUTE.DO NOT INDUCE VOMITING.

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Precautions for Safe Handling and Use

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Steps If Matl Released/Spill: FLUSH WITH PLENTY OF WATER AND NEUTRALIZE WITH ALKALINE MATL SUCH AS SODA ASH,LIME,ETC.PROVIDE ADEQUATE VENTILATION AS OXIDES OF NITROGEN AND CO*2 ARE GENERATED DURING NEUTRALIZATION.
Waste Disposal Method: DILUTE AND NEUTRALIZE.IF PERMITTED BY LOCAL,STATE AND FEDERAL REGULATIONS,FLUSH NEUTRAL RESIDUE TO SEWER WITH PLENTY OF WATER.CONTACT LOCAL AUTHORITIES FOR DISPOSAL COMPLIANCE.
Precautions-Handling/Storing: STORE IN WELL-VENTILATED PROPERLY DRAINED SITE AWAY FROM HEAT,SUN.ISOLATE FROM METALS,ORGANICS,WOOD,PAPER PRODUCTS.
PROTECT FROM PHYSICAL DAMAGE.
Other Precautions: NITRIC ACID VAPOR AND OXIDES ARE INSIDIOUS.SYMPTOMS FROM INHALATION MAY BE DELAYED.DO NOT BREATH FUMES.SEE MCA CHEMICAL SAFETY
DATA SHEET SD-5,FROM MANUFACT CHEM ASSOC.IN WASHINGTON D.C.

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Control Measures

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Respiratory Protection: USE SELF-CNTND OR CLEAN AIR SUPPLIED BREATHING APPARATUS.
Ventilation: LOCAL EXHAUST SUFFICIENT TO ELIMINATE ALL FUMES.
Protective Gloves: NEOPRENE
Eye Protection: CHEM SAFETY GOGGLES
Other Protective Equipment: NEOPREN APRON/SHOES,HARD HAT,NEOPREN CLOTHING, FACE SHIELD

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Transportation Data

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DOT PSN Code: KFD
DOT Proper Shipping Name: NITRIC ACID
DOT Class: 8
DOT ID Number: UN2031
DOT Pack Group: II
DOT Label: CORROSIVE
IMO PSN Code: KPF
IMO Proper Shipping Name: NITRIC ACID
IMO Regulations Page Number: 8195
IMO UN Number: 2031
IMO UN Class: 8
IMO Subsidiary Risk Label: -
IATA PSN Code: RWF

IATA UN ID Number: 2031
IATA Proper Shipping Name: NITRIC ACID
IATA UN Class: 8
IATA Label: CORROSIVE
AFI PSN Code: RWF
AFI Symbols: 0
AFI Prop. Shipping Name: NITRIC ACID
AFI Class: 8
AFI ID Number: UN2031
AFI Pack Group: II
AFI Label: CORROSIVE
AFI Basic Pac Ref: 12-14

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Disposal Data

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Refer to applicable regional, state and federal codes.

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Label Data

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Special Hazard Precautions: POISONOUS; MAY BE FATAL IF INHALED, SWALLOWED OR ABSORBED THROUGH SKIN. 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.

The information contained herein is based on data considered to be accurate. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use of the product.

Material Safety Data Sheet

ICI ACRYLICS
A Business of ICI Canada Inc.
7521 Tranmere Drive
Mississauga, Ontario
L5S 1L4 . 1-800-387-4880

EMERGENCY CONTACTS

FOR EMERGENCIES INVOLVING CHEMICAL SPILL OR RELEASE, CALL THE ICI CANADA TRANSPORTATION EMERGENCY RESPONSE SYSTEM AT 1-800-561-3636.

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Sodium Cyanide

CAS Number: 143-33-9
MSDS Number: 350000
MATS Index: 20191
Date Issued: 03-MAY-94

Product Use: Mining; gold extraction; dye and pigment manufacture.

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT(S)	% (w/w)	ACGIH TWA	CAS NO.
Sodium Cyanide	60-100	Not Listed.	143-33-9

SECTION 3 - HAZARD IDENTIFICATION

****
Emergency Overview: Contact with water liberates toxic gas. Very toxic by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. Very toxic to aquatic organisms.

****

SECTION 4 - FIRST AID MEASURES

General: SPEED IS ESSENTIAL. Cyanide First Aid Treatment: Crush one pearl of amyl nitrite onto a cloth and hold to the victims nose for 15-30 seconds of each minute. Use a new pearl every 5 minutes (0.3 mg/pearl) or every 3 minutes (0.18 mg/pearl).

Inhalation: Artificial respiration should be given by a trained person through a special bag and mask. Mouth-to-mouth respiration should not be given because Cyanides may be absorbed by the rescuer through mouth-to-mouth contact.

Skin Contact: Flush skin with running water for a minimum of 20 minutes. Start flushing while removing contaminated clothing. If irritation persists, repeat flushing. Obtain medical attention IMMEDIATELY.

Eye Contact: Immediately flush eyes with running water for a minimum of 20 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Obtain medical attention IMMEDIATELY.

Ingestion: If victim is alert and not convulsing, induce vomitin forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. IMMEDIATELY transport victim to an emergency facility.

Note to Physicians: 1. Ensure, by consideration of all the clinical facts, that the case is one of cyanide poisoning. 2. The classical ancillary treatment for cyanide poisoning should not be omitted, e.g. oxygen, resuscitation. 3. Administer 10 ml of 3% Sodium Nitrite i.v. at 2.5-5 ml/min. to adults and 10 mg/kg to children. 4. 100% oxygen with i.v. Sodium Thiosulphate. 5. After treatment, blood samples should be sent to a Forensic Science Laboratory for estimation of the blood cyanide level. Any level above 0.25 mg/l is dangerous; a level above 2.0 mg/l is potentially fatal. A second blood specimen can be taken after successful treatment and also estimated for any residual cyanide level. Blood cyanide level is for record purposes only. 6. Iron salt antidote kits are available and can be effective if taken within minutes of Cyanide ingestion. These react with swallowed Cyanides to block absorption and stimulate vomiting. The problem with them is that the component solutions must be fresh and must be mixed immediately before use. Many experts believe that the outcome will be inevitable, long before a useful dose of this antidote could reach the victim's stomach and, therefore, ICI Canada Inc. recommends the administration of Amyl Nitrite as an appropriate emergency first aid measure instead.

SECTION 5 - FIRE-FIGHTING MEASURES

Flash Point: This product does not flash.
Flammable Limits (Lower): Not applicable.
Flammable Limits (Upper): Not applicable.
Auto Ignition Temperature: Not applicable.
Decomposition Temperature: Not available.

Rate of Burning: Not available.
Explosive Power: Not available.
Sensitivity to Mechanical Impact: Not expected to be sensitive to mechanical impact.
Sensitivity to Static Discharge: Not expected to be sensitive to static discharge.

Fire and Explosion Hazards: Containers may burst under intense heat.

Extinguishing Media: Use media appropriate for surrounding fire and/or materials.

Fire Fighting Procedures: Smoke from fires involving this product will present unusual hazards. Avoid breathing smoke and mist. Avoid contact with fallout and runoff. Minimize the amount of water used for fire fighting. Dike area to prevent runoff. Avoid use of high pressure hose if possible, as this may cause the product to spread from the broken containers, increasing contamination hazards. Isolate debris for proper disposal.

Fire Fighting Protective Equipment: Full protective clothing must be worn in a fire involving this material. Toxic gases and vapours are produced on decomposition.

NOTE: Also see "Section 10 - Stability and Reactivity"

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spills, Leaks, or Releases: Collect product and contaminated soil for re-use or disposal. Contain storm water runoff by dyking with earth or other barrier, to minimize the spread of contamination. Notify applicable government authority if release is reportable or could adversely affect the environment.

Deactivating Chemicals: For cyanides, wear full protective clothing, eye protection, and respiratory protection during the detoxifying procedure. Use commercial strength sodium hypochlorite (10%) to which caustic soda has been added to make solution very alkaline (pH10-12). Dilute solution with equal parts water and apply to visible excess materials. Test with Starch Iodide paper to assure an excess of hypochlorite.

SECTION 7 - HANDLING AND STORAGE

Handling: Use normal good industrial hygiene and housekeeping practices.

Storage Requirements: Store in a cool, well-ventilated area. Keep away from heat, sparks and flames. Keep containers closed.

Storage Temperature: Ideal storage temperature is 10-27oC.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

PREVENTIVE MEASURES:

Recommendations listed in this section indicate the type of equipment which will provide protection against over exposure to this product. Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

Engineering Controls: Local exhaust ventilation required.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Use gas-tight chemical safety goggles when there is potential for eye contact.

Skin Protection: Gloves and protective clothing made from PVC should be impervious under conditions of use.

Respiratory Protection: A NIOSH/MSHA-approved air-purifying respirator equipped with dust, mist, fume cartridges up to the TLV. An air-supplied respirator if concentrations are higher or unknown. Cyanides may form hazardous concentrations of Hydrogen Cyanide gas in air when in prolonged contact with moist air in closed areas.

EXPOSURE GUIDELINES:

PRODUCT:

None established for product.

HAZARDOUS INGREDIENT(S):

Sodium Cyanide:
ICI Guideline 5 mg/m3 (skin, ceiling)

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Alternate Name(s): Not available.
Chemical Name: Sodium salt of Hydrocyanic Acid
Chemical Family: Inorganic cyanide.
Molecular Formula: C-N-Na
Appearance: White deliquescent, crystalline powder.
Odour: NaCN is odourless. HCN has burnt almond odour.
Odour Threshold (ppm): 0.2
pH: (Alkaline)

Vapour Pressure (mm Hg at 20oC): See 'Additional Properties'.
Vapour Density (Air=1): Not applicable.
Boiling Point: 1496 to 1500oC
Melting Point: 560 to 564oC
Solubility (Water): 58 %
Solubility (Other): Slightly soluble in ethanol and methanol. Soluble in ammonia.
Specific Gravity: 1.6
Evaporation Rate: Not Applicable.
% Volatile by Volume: 0 %
% Volatile Organic Compounds: 0 %
Molecular Weight: 49.01
Additional Properties: Vapour Pressure: 1 mm Hg at 817oC. Sodium Cyanide decomposes readily on contact with acids to HCN. Contact with neutral water can also liberate HCN.

SECTION 10 - STABILITY AND REACTIVITY

Hazardous Decomposition Products: Cyanide thermal decomposition products are very toxic and may include hydrogen cyanide.
Chemical Stability: Stable at room temperature.
Conditions to Avoid: Cyanides may form hazardous concentrations of Hydrogen Cyanide gas in air when in prolonged contact with moist air in closed areas.
Incompatibility with other Substances: Cyanide contact with strong oxidizers such as nitrates and chlorates may cause fire and explosion. Contact with acids and acid salts causes immediate formation of toxic and flammable Hydrogen Cyanide.
Hazardous Polymerization: Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

Summary: May cause systemic poisoning.

TOXICOLOGICAL DATA:

PRODUCT:

None established for product.

INGREDIENTS:

Sodium Cyanide:
Oral LD50 (rat) = 6.4 mg/kg
Inhalation LC50 (rat) = 142 ppm/30 min. for HCN

POTENTIAL HEALTH EFFECTS:

Inhalation: Product may cause severe irritation of the nose, throat and respiratory tract. Repeated and/or prolonged exposures

may cause productive cough, running nose, bronchopneumonia, pulmonary edema (fluid build-up in lungs), and reduction of pulmonary function.

Skin Contact: May cause skin irritation.

Eye Contact: This product may cause irritation, redness and possible damage due to abrasiveness. Absorption through the eye may produce significant systemic effects.

Ingestion: Dust has a bitter, acrid, burning taste and can cause salivation, nausea, a feeling of constriction and numbness in the throat and, possibly, a sensation of stiffness in the lower jaw.

Subchronic Effects: Cyanosis from cyanides; early symptoms are headache, weakness, dyspnea, dizziness, stupor, respiratory distress and nausea due to anoxia. In severe cases, breathing is rapid and deep, then becomes slow and gasping. The victim may feel an irregular heartbeat and tightness in the chest. The skin appears bright pink or red.

Chronic Effects: None known.

Carcinogenicity: The ingredient(s) of this product is (are) not classified as carcinogenic by ACGIH (American Conference of Governmental Industrial Hygienists) or IARC (International Agency for Research on Cancer), not regulated as carcinogens by OSHA (Occupational Safety and Health Administration), and not listed as carcinogens by NTP (National Toxicology Program).

Mutagenicity: There is no evidence of mutagenic potential.

Reproductive Effects: No information is available and no adverse reproductive effects are anticipated.

Teratogenicity and Fetotoxicity: A study in animals has shown that high exposures produce teratogenic effects in the presence of maternal toxicity.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicological Information: Highly toxic to aquatic life.

Environmental Effects: Can be dangerous if allowed to enter drinking water intakes.

SECTION 13 - DISPOSAL CONSIDERATIONS

Dispose of waste material at an approved (hazardous) waste treatment/disposal facility in accordance with applicable local,

provincial and federal regulations. Do not dispose of waste with normal garbage, or to sewer systems.

SECTION 14 - TRANSPORT INFORMATION

TDG Name: Sodium Cyanide

TDG Class/Division: 6.1 (9.2)
Product Indentification Number (PIN): UN1689
Packing Group: I

Transportation Emergency Telephone Number: 1-800-561-3636

DOT Class: Poison B
IMO: Marine Pollutant - Group "P"

SECTION 15 - REGULATORY INFORMATION

CANADIAN CLASSIFICATION:

This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and this MSDS (Material Safety Data Sheet) contains all the information required by the CPR.

Controlled Products Regulations (WHMIS) Classification: D- 1A: Very Toxic (acute effects). D-2B: Toxic.

CEPA / Canadian Domestic Substances List (DSL): The substance(s) in this product is/are on the Canadian Domestic Substances List (CEPA DSL).

IARC Classification: None of the components of this product are listed on IARC.

USA CLASSIFICATION:

OSHA Classification:

Health: Highly toxic. Irritant.

SARA Regulations Sections 313 and 40 CFR 372: This product does not contain any chemicals subject to reporting requirements.

Emergency Planning and Notification (40 CFR 355): This product contains chemical(s) which is/are on the Extremely Hazardous Chemicals list: Sodium salt of Hydrocyanic Acid (143-33-9), TPQ=100

EPA "CLEAN AIR ACT": This product does not contain nor is it manufactured with ozone depleting substances.

Other Regulations/Legislation which apply to this product: MARPOL (Marine Pollutants, IMO Annex III, 1973), Massachusetts Right-to-Know, Pennsylvania Right-to-Know, New Jersey Right-to-Know, CERCLA.

EEC CLASSIFICATION:

EINECS: 2055994

SECTION 16 - OTHER INFORMATION

MATS Index: 20191

REFERENCES:

RTECS-Registry of Toxic Effects of Chemical Substances, On-line search, Canadian Centre for Occupational Health and Safety RTECS database, National Institute for Occupational Safety and Health, U.S. Dept. of Health & Human Services, Cincinnati, 1994.

Supplier's Material Safety Data Sheets.

"CHEMINFO", through "CCINFOdisc", Canadian Centre for Occupational Health and Safety, Hamilton, Ontario, Canada.

Prepared By: Safety, Health and Environment (416)229-8252

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and ICI ACRYLICS will not be liable for any damages, losses, injuries, or consequential damages which may resutl from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years.

-- SODIUM HYPOCHLORITE - BLEACH

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MSDS Safety Information

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FSC: 6810
NIIN: 00-900-6276
MSDS Date: 05/01/1998
MSDS Num: CLLCD
Product ID: SODIUM HYPOCHLORITE - BLEACH
MFN: 01
Responsible Party
Cage: 63536
Name: SULTAN CHEMISTS INC
Address: 85 W FOREST AVE
City: ENGLEWOOD NJ 07631-4001
Info Phone Number: 201-871-1232
Emergency Phone Number: 800-535-5053
Review Ind: Y
Published: Y

==========

Contractor Summary

==========

Cage: 63536
Name: SULTAN CHEMISTS INC
Address: 85 W FOREST AVE
City: ENGLEWOOD NJ 07631-4001
Phone: 201-871-1232

==========

Item Description Information

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Item Manager: S9G
Item Name: SODIUM HYPOCHLORITE SOLUTION
Unit of Issue: CN
Quantitative Expression: 00000000005GL
UI Container Qty: 1
Type of Container: CAN

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Ingredients

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Cas: 7681-52-9
RTECS #: NH3486300
Name: SODIUM HYPOCHLORITE
< Wt: 6.
ACGIH TLV: 200MG/M3;8 HR
EPA Rpt Qty: 100 LBS
DOT Rpt Qty: 100 LBS

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Health Hazards Data

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Route Of Entry Inds - Inhalation: YES
Skin: YES
Ingestion: YES
Effects of Exposure: CAUSES CAUSTIC BURNS. MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION. CAUSES EYE AND SKIN IRRTANT. MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
Signs And Symptions Of Overexposure: CAUSES CAUSTIC BURNS. MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION. CAUSES EYE AND SKIN IRRTANT. MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
First Aid: SKIN AND EYES: FLUSH WELL WITH WARM WATE FOR AT LEAST 15 MINUTES. INGESTION: DO NOT INDUCE VOMITING. DILUTE EITH LARGE QUANTITIES OF MILK OR

WATER. INHALATION: REMOVE TO FRESH AIR. IF BREATHING IS DIF FICULT, GIVE OXYGEN. GET MEDICAL ATTENTION.

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Handling and Disposal

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Spill Release Procedures: FLUSH SMALL AMOUNT TO DRAIN. ADJUST PH TO NEUTRALIZE WITH DILUTE ACIDS FOR LARGE SPILLS. COLLECT AND RETURN LARGE AMOUNTS TO CONTAINER.

Waste Disposal Methods: ADJUST PH TO NEUTRAL. FLUSH THE AQUEOUS SOLUTION DOWN THE DRAIN WITH PLENTY OF WATER. OBSERVE ALL FEDERAL, STATE AND LOCAL LAWS.

Handling And Storage Precautions: IRRITANT. KEEP TIGHTLY CLOSED. STORE IN A COOL DRY PLACE. WASH THOROUGHLY AFTER HANDLING.

Other Precautions: DO NOT GET IN EYS, ON SKIN, ON CLOTHING.

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Fire and Explosion Hazard Information

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Flash Point Text: NON-FLAMMABLE

Lower Limits: 0

Upper Limits: 0

Extinguishing Media: NOT REQUIRED.

Fire Fighting Procedures: WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

Unusual Fire/Explosion Hazard: EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

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Control Measures

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Respiratory Protection: WEAR NIOSH/MSHA APPROVED RESPIRATOR.

Ventilation: LOCAL EXHAUST: FACE VELOCITY 60 FPM. CHEMICAL FUME HOOD. DO NOT BREATHE DUST.

Protective Gloves: CHEMICAL RESISTANT

Eye Protection: CHEMICAL RESISTANT GOGGLES

Other Protective Equipment: SAFETY SHOWER AND EYE BATH.

Work Hygienic Practices: WASH THOROUGHLY AFTER USE.

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Physical/Chemical Properties

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HCC: B1

Boiling Point: =104.4C, 220.F

Melt/Freeze Pt: =-.8C, 30.5F

Vapor Pres: 23 MMHG/25C

Spec Gravity: 1.210/25C

PH: 11.5

Solubility in Water: MISCIBLE

Appearance and Odor: COLORLESS TO LIGHT YELLOW LIQUID ODOR OF CHLORINE

Percent Volatiles by Volume: 93

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Reactivity Data

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Stability Indicator: YES

Stability Condition To Avoid: CONTACT WITH ACIDS.

Materials To Avoid: ACIDS AND ACID SOLUTIONS.

Hazardous Decomposition Products: CHLORINE.

Hazardous Polymerization Indicator: NO

Conditions To Avoid Polymerization: WILL NOT OCCUR.

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Toxicological Information

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Ecological Information

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MSDS Transport Information
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Transport Information: PROPER SHIPPING NAME: SODIUM HYPOCHLORITE SOLUTION. HAZARDOUS CLASSIFICATION: CORROSIVE LIQUID. IDENTIFICATION NUMBER:NONE. ADDITIONAL LABELING: CORROSIVE LIQUID.
==========
Regulatory Information
==========
Sara Title III Information: THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICAL SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO- KNOW ACT OF 1986 AND OF CFR 372, SODIUM HYPOCH LORITE: CAS REG NO. 7681-52-9 LESS THAN 6.0%. IT CONTAINS NO OTHER HAZARDOUS INGREDIENTS.
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Other Information
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Other Information: ALL CHEMICALS MAY POSE UNKNOWN HAZARDS AND SHOULD BE USED WITH CAUTION. THIS MATERIAL SAFETY DATA SHEET (MSDS) APPLIES ONLY TO THE MATERIAL AS PACKAGED. IF THIS PRODUCT IS COMBINED WITH OTHER MATERIAL S, DETERIORATES, OR BECOMES CONTAMINATED, IT MAY POSE HAZARDS NOT MENTIONED IN THIS MSDS
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Transportation Information
==========
Responsible Party Cage: 63536
Trans ID NO: 158729
Product ID: SODIUM HYPOCHLORITE - BLEACH
MSDS Prepared Date: 05/01/1998
Review Date: 09/06/2001
MFN: 1
Multiple KIT Number: 0
Unit Of Issue: CN
Container QTY: 1
Type Of Container: CAN
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Detail DOT Information

DOT PSN Code: DWG
Symbols: G
DOT Proper Shipping Name: CORROSIVE LIQUIDS, N.O.S.
Hazard Class: 8
UN ID Num: UN1760
DOT Packaging Group: III
Label. CORROSIVE
Special Provision: T7
Non Bulk Pack: 203
Bulk Pack: 241
Max Qty Pass: 5 L
Max Qty Cargo: 60 L
Vessel Stow Req: A
Water/Ship/Other Req: 40
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Detail IMO Information
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IMO PSN Code: ESH
IMO Proper Shipping Name: CORROSIVE LIQUID, N.O.S. o
IMDG Page Number: 8147
UN Number: 1760
UN Hazard Class: 8

IMO Packaging Group: I/II/III
Subsidiary Risk Label: -
EMS Number: 8-15
MED First Aid Guide NUM: 760
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Detail IATA Information
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IATA PSN Code: HKW
IATA UN ID Num: 1760
IATA Proper Shipping Name: CORROSIVE LIQUID, N.O.S. *
IATA UN Class: 8
IATA Label: CORROSIVE
UN Packing Group: III
Packing Note Passenger: 818
Max Quant Pass: 5L
Max Quant Cargo: 60L
Packaging Note Cargo: 820
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Detail AFI Information
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AFI PSN Code: HKW
AFI Symbols: *
AFI Proper Shipping Name: CORROSIVE LIQUID, N.O.S.
AFI Hazard Class: 8
AFI UN ID NUM: UN1760
AFI Packing Group: III
Special Provisions: P5
Back Pack Reference: A12.3
==========
HAZCOM Label
==========
Product ID: SODIUM HYPOCHLORITE - BLEACH
Cage: 63536
Company Name: SULTAN CHEMISTS INC
Street: 85 W FOREST AVE
City: ENGLEWOOD NJ
Zipcode: 07631-4001
Health Emergency Phone: 800-535-5053
Label Required IND: Y
Date Of Label Review: 09/06/2001
Status Code: A
Origination Code: F
Eye Protection IND: YES
Skin Protection IND: YES
Signal Word: DANGER
Respiratory Protection IND: YES
Health Hazard: Severe
Contact Hazard: Severe
Fire Hazard: None
Reactivity Hazard: None
Hazard And Precautions: CAUSES CAUSTIC BURNS. MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION. CAUSES EYE AND SKIN IRRTANT. MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
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