

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name : PUMA[®] 2132
Common Chemical Name : triethylenediamine (TEDA)
(monoethylene glycol)
Supplier : ExpoMix Corporation
1099 Brown Street, Unit 203
Wauconda, IL 60084
USA
Ph: (847) 487-0730
Fx: (847) 487-0217
Emergency Telephone : 800-424-9300 - CHEMTREC

SECTION 2 - INGREDIENTS

Chemical Name	CAS	EINECS	Amount
triethylenediamine	280-57-9	205-999-9	33%
monoethylene glycol	107-21-1	203-473-3	67%

Chemical Family : Tertiary amine
Empirical Formula : Mixture

Occupational Exposure Limit(s), if available, are listed in section 8.

SECTION 3 - HEALTH HAZARDS

HMIS HEALTH 2 **FLAMMABILITY** 1 **REACTIVITY** 0

Hazards : Severe eye irritant. Respiratory tract irritant. Moderate skin irritant.
Routes of Exposure : Eye and skin contact. Ingestion. Inhalation.
Exposure Standards : Exposure limits not established by OSHA (ACGIH).
Maintain air contaminant concentrations in the workplace at the lowest possible levels.

SECTION 3 - HEALTH HAZARDS (CONT.)

Human Health Hazards

: Product vapor in low concentrations can cause lacrimation, conjunctivitis and cornea edema when absorbed into the tissue of the eye from the atmosphere. Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. The effect is transient and has no known residual effect. Contact with eyes causes severe irritation and pain. Contact with the skin may cause dryness (defatting), itching and/or rash. Contact with skin causes irritation, redness and discomfort which is transient. Inhalation of vapor and mists may cause irritation in the respiratory tract. Coughing and chest pain may result. Inhalation of vapors may progressively cause mild intoxication, lethargy, analgesia, narcosis and loss of consciousness. Ingestion may cause vomiting unless treated promptly. Ingestion may cause death unless treated promptly.

Repeated and/or prolonged exposures may result in: kidney disorders (such as edema, or proteinuria), adverse eye effects (such as conjunctivitis or corneal damage), and adverse skin effects (such as defatting, rash or irritation), adverse respiratory effects (such as cough, tightness of chest or shortness of breath), reproductive disorders (such as birth defects or sterility). Effects from Inhalation of vapors may be delayed. Dryness of nasal passages may be experienced when material is inhaled over a long period of time. Repeated and/or prolonged exposure to low concentrations of vapor may cause: sore throat, eye irritation which are transient.

**Medical Conditions
Generally Aggravated by
Exposure
Carcinogens Under OSHA
ACGIH, NTP, IARC, Other**

: Kidney disorders, eye disease, skin disorders and allergies, chronic respiratory disease (bronchitis, emphysema), asthma.

: This product contains no carcinogens in concentrations of 0.1 percent or greater.

SECTION 4 - FIRST AID

Effects and Symptoms**Ingestion**

: If swallowed call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as directed by medical personnel. Never give anything by mouth to an unconscious person. Do NOT apply mouth-to-mouth respiration.

Inhalation

: Move patient to fresh air. If breathing has stopped or is labored give assisted respiration. Supplemental oxygen may be indicated. Seek medical advice. Prevent aspiration of vomit. Turn victim's head to the side.

Skin Contact

: Remove contaminated clothing and shoes. Remove product and immediately flush affected area with water for at least 15 minutes. Destroy contaminated leather apparel. Seek medical advice. Launder contaminated clothing prior to use.

Eye Contact

: Hold eye lids apart and immediately flush eyes with plenty of water for at least 15 minutes. Seek medical advice.

SECTION 5 - FIRE AND EXPLOSION DATA

Extinguishing Media

: Ignition will give rise to a Class B fire. In case of large fire use: alcohol foam, water spray. In case of small fire use: carbon dioxide (CO₂), dry chemical, dry sand or limestone.

Protection of Fire-Fighters

: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Wear butyl rubber boots, gloves and body suit. May generate toxic or irritating combustion products. Sudden reaction and fire may result if product is mixed with an oxidizing agent. May generate carbon monoxide gas, toxic nitrogen oxide gases and ammonia gas.

Fire Hazard Classification (OSHA/NFPA)

: Class IIIB

SECTION 6 - ACCIDENTAL RELEASE MEASURES

- Containment Techniques** : Stop the leak, if possible. Reduce vapor spreading with water spray. Shut off and remove all ignition sources. Construct a dike to prevent spreading (includes molten liquids until they freeze). Ventilate the space involved.
- Personal Precautions** : Evacuate all personnel downwind from the spill. Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Evacuate the area.
- Environmental Precautions** : Do NOT release product to drain. Observe all Federal, State and local environmental regulations for appropriate product disposal.
- Methods for Cleaning up** : If recovery is not feasible, absorb product with dry soil, sand or non-reactive absorbent and place it in an appropriate waste chemical container for disposal. Flush area with water spray. Transfer to containers by suction. Place in metal containers for recovery and disposal.
Ventilate area and wash spill site after material pickup is complete. Clean-up personnel must be equipped with self contained breathing apparatus and butyl rubber protective clothing. For large spills, recover spilled material with a vacuum truck.

SECTION 7 - HANDLING AND STORAGE

- Handling** : Avoid contact with skin or eyes. Avoid breathing of vapors. Handle product in a well ventilated work space and do not eat or drink. Keep containers closed when empty. Empty containers may contain explosive vapors. Smoking in area is prohibited. Avoid using in any spray application without strict conformance to all applicable electrical codes and the OSHA limit for maximum allowable airborne concentrations.
- Storage** : Keep product away from acids, oxidants, heat, flames and sparks. Keep in cool, dry ventilated storage and in closed containers. Ground all containers during transfer. Store in steel containers. Do not store in reactive metal containers. Store in steel containers preferably located outdoors, above ground and surrounded by dikes to contain spills or leaks.
- Other Precautions** : Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations (OSHA).

SECTION 8 - PERSONAL PROTECTION AND EXPOSURE CONTROLS

Engineering Measures	: Maintain air concentrations in work spaces in accord with standards outlined in Sections 2 and 3.
Hygienic Measures	: Provide readily accessible eye wash stations and safety showers. Wash at the end of each work shift and before eating, smoking or using the bathroom. Promptly remove clothing that becomes contaminated. Discard contaminated leather articles. Launder or discard contaminated clothing. Use appropriate hand and skin lotions to protect the skin.
Occupational Exposure Limits	: No Data.
Personal Protective Equipment Respiratory System	: Not required under normal conditions in a well-ventilated area. Under the following conditions a respirator may be required: when product vapor concentration exceeds the limits listed in Sections 2 and 3, during repair and cleaning of equipment, during transfer or discharge of the product, sampling, spray applications. Types of respirators that may be used include the following: chemical Cartridge Respiratory with face piece to protect against the organic vapor, Supplied air respirator with full face piece (NIOSH Approved), Self-contained breathing apparatus in pressure demand mode. In emergency conditions use a self-contained breathing apparatus in pressure demand mode.
Skin and Body	: Impervious clothing. Slicker suit. Rubber boots. Full rubber suit (rain gear). Butyl or latex. Long sleeved clothing.
Hands	: Neoprene rubber gloves. Impermeable gloves. Cuffed butyl rubber gloves. Nitrile rubber gloves. The breakthrough time of the selected glove(s) must be greater than the intended use period.
Eyes	: Splash-proof eye goggles. In emergency situations, use full face shield with goggles underneath.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Guaranteed Values

triethylenediamine : 33% min.
Water : 0.30% max.

Typical Values

Physical State : Liquid
Color : Colorless to slight yellow
Odor : Ammoniacal
Boiling Point : >100 °C (>212 °F)
Specific Gravity (Water = 1) : 1.09
Solubility in Water : Completely (100%)
Flash Point (Closed Cup) : >105 °C (>221 °F)
Vapor Pressure : <5.00 mmHg @ 21 °C (70 °F)
Molecular Weight : Mixture
Viscosity : 60 @ 25 °C (77 °F)
Calculated OH Number : 1207 mgKOH/g

SECTION 10 - STABILITY AND REACTIVITY

Stability : Stable
Conditions to Avoid (if instable) : Not Applicable
Materials to Avoid : Mineral acids (i.e. sulfuric, phosphoric, etc.). Organic acids (i.e. acetic, citric etc.). Oxidizing agents (i.e. perchlorates, nitrates etc.). Reactive metals (i.e. sodium, calcium, zinc etc.). Sodium or calcium hypochlorite. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Dehydrating agents. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Materials reactive with hydroxyl compounds. A reaction accompanied by large heat release occurs when the product is mixed with acids. Heat generated may be sufficient to cause vigorous boiling creating a hazard due to splashing or spattering of hot material.
Hazardous Decomposition : Nitrogen Oxide can react with water vapor to form nitric acid (TLV = 2ppm). Carbon monoxide, carbon dioxide, and nitrogen oxides in a fire. Ammonia when heated. Irritating and toxic fumes at elevated temperatures. Nitric acid in a fire. Aldehydes. The decomposition of nitrogen gases (except nitrous oxide) is highly toxic.
Hazardous Polymerization : Will not occur.

SECTION 11 - TOXICOLOGICAL PROPERTIES

Acute Toxicity

Oral (Rat) LD50: 3,200 mg/kg
Skin (Rabbit) LD50: 9,530 mg/kg (Estimate)
Inhalation (Rat) LC50: >20 mg/l / 1 hr (No deaths)

Other Data

Data available on components only.

Target Organs

Eye
Skin
Kidneys
Respiratory system
Reproductive system

Irritation Effects Data

Severe irritant to the eyes of a rabbit. Moderate irritant to the skin of a rabbit. Projecting respiratory irritation due to moderate skin irritation.

Chronic/Subchronic Data

This product contains ethylene glycol, which has been shown to cause dose-related teratogenic effects in rats and mice when given by gavages or in drinking water at high concentrations or does. Ethylene glycol has also caused teratogenic effects in mice when administered as an aerosol at a concentration of 2500 mg/m³ for 6 hours a day throughout the period of organogenesis. Repeated ingestion of ethylene glycol has caused bladder and kidney stone formation, and kidney damage in laboratory animals. Two chronic feeding studies, using rats and mice, have not produced any evidence that ethylene glycol caused dose-related increases in tumor incidence. No mutagenic activity has been detected with short term genotoxicity test(s) on this or similar materials or components.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity Effects

No Data.

Other Ecological Information

No Data.

SECTION 13 - DISPOSAL CONSIDERATIONS

Methods of Disposal : Comply with all federal, state and local environmental regulations.

Please refer to the relevant EU regulations, in particular the guidelines / decisions of the Council regarding handling of wastes (e.g. 75/442/EEC, 91/689/EEC, 94/67/EC, 94/904/EC) as implemented in National regulations.

Must be disposed of by special means, e.g. suitable incineration, in accordance with local regulations.

SECTION 14 - TRANSPORT INFORMATION

DOT Non-Bulk Shipping Name : Chemicals, N.O.I. - Not DOT Regulated

DOT Bulk Shipping : Refer to Bill of Lading

IMO Shipping Data : Refer to Bill of Lading

ICAO/IATA Shipping Data : Chemicals, N.O.I. - Not DOT Regulated

SECTION 15 - REGULATORY INFORMATION

US Federal Regulations

Toxic Substances Control Act (TSCA)

All components are included in the EPA TSCA Chemical Substance Inventory.

Toxic Substances Control Act (TSCA) 12(b) Component(s)

None

OSHA Hazard Communication Standard (29 CFR1910.1200) hazard class(es)

Irritant. Kidney toxin. Reproductive toxin.

EPA SARA Title III Section 312 (40CFR370) hazard class

Immediate Health Hazard. Delayed Health Hazard.

EPA SARA Title III Section 313 (40CFR372) toxic chemicals above “de minimis” level
ethylene glycol

State Regulations

Proposition 65 Substances (component(s) known to the State of California to cause cancer and/or reproductive toxicity and subject to warning and discharge requirements under the “Safe Drinking Water and Toxic Enforcement Act of 1986”)

None

New Jersey Trade Secret Registry Number(s)

None

SECTION 15 - REGULATORY INFORMATION (CONT.)

International Regulations:**Canada****DSL**

Included on Inventory

WHMIS Hazard Classification

Class B Division 2A, Class D Division 2B.

WHMIS Ingredient Disclosure List

triethylenediamine (TEDA)

ethylene glycol

WHMIS Trade Secret Registry Number(s)

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

None

WHMIS Symbols

Stylized T.

Australia**AICS**

Included on Inventory

Japan**MITI**

Included on Inventory

European Economic Community (EEC)**EINECS/ELINCS Master Inventory**

Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer.

EEC Symbol

Harmful (Xn)

EEC Risk R Phrases

Irritating to eyes (R36). Harmful if swallowed (R22)

EEC Safety Phrases

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice (S26)

Included on Inventory

China**SEPA**

Included on Inventory

SECTION 16 - OTHER INFORMATION

The environmental, health and safety information contained herein is given in compliance with statutory obligations and relates only to the substance/preparation described in this material safety data sheet. This data sheet and the information it contains are not intended to supersede any terms and conditions of sale and does not constitute a specification, promise, representation, or warranty, whether express or implied, except to the extent required by applicable law. The environmental, health and safety information contained herein is believed to be accurate based on our current knowledge. It remains the responsibility of the customer to provide a safe workplace and to comply with all applicable laws and regulations.

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