





Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table><tr><td>Health Hazard</td><td>3</td></tr><tr><td>Fire Hazard</td><td>3</td></tr><tr><td>Reactivity</td><td>0</td></tr></table>	Health Hazard	3	Fire Hazard	3	Reactivity	0	
Health Hazard	3							
Fire Hazard	3							
Reactivity	0							
		See Section 15.						

Section 1. Chemical Product and Company Identification

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Common Name/ Trade Name	Ethylenediamine	Catalog Number(s).	E1096, ET112
Manufacturer	SPECTRUM CHEMICAL MFG. CORP. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	CAS#	107-15-3
Commercial Name(s)	Not available.	RTECS	KH8575000
Synonym	1,2-Diaminoethane	TSCA	TSCA 8(b) inventory: Ethylenediamine
Chemical Name		CI#	Not available.
Chemical Family	Not available.	IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 CALL (310) 516-8000	
Chemical Formula	C ₂ H ₈ N ₂		
Supplier	SPECTRUM CHEMICAL MFG. CORP. 14422 S. SAN PEDRO STREET GARDENA, CA 90248		

Section 2. Composition and Information on Ingredients

		Exposure Limits			
Name	CAS #	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
1) Ethylenediamine	107-15-3	25			100
Toxicological Data on Ingredients Ethylenediamine: ORAL (LD50): Acute: 500 mg/kg [Rat]. 470 mg/kg [Guinea pig]. DERMAL (LD50): Acute: 750 mg/kg [Rabbit]. VAPOR (LC50): Acute: 424.3 ppm 4 hour(s) [Mouse].					

Section 3. Hazards Identification

Potential Acute Health Effects Extremely hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant), of ingestion, of inhalation. Very hazardous in case of skin contact (sensitizer). Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

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Potential Chronic Health Effects	<p>Extremely hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant), of ingestion, of inhalation.</p> <p>Very hazardous in case of skin contact (sensitizer).</p> <p>CARCINOGENIC EFFECTS: Not available.</p> <p>MUTAGENIC EFFECTS: Not available.</p> <p>TERATOGENIC EFFECTS: Not available.</p> <p>DEVELOPMENTAL TOXICITY: Not available.</p> <p>The substance is toxic to kidneys, lungs, liver, mucous membranes.</p> <p>Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs. Repeated or prolonged inhalation of vapors may lead to chronic respiratory irritation.</p>	

Section 4. First Aid Measures	
Eye Contact	Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.
Skin Contact	If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical got on the victim's exposed skin, such as the hands : Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.
Ingestion	Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data	
Flammability of the Product	Flammable.
Auto-Ignition Temperature	385°C (725°F)
Flash Points	CLOSED CUP: 34°C (93.2°F).
Flammable Limits	LOWER: 4.2%
Products of Combustion	These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...).
Fire Hazards in Presence of Various Substances	Flammable in presence of open flames and sparks, of heat, of oxidizing materials.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Special Remarks on Fire Hazards	Not available.

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Special Remarks on Explosion Hazards		Not available.	
Section 6. Accidental Release Measures			
Small Spill	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.		
Large Spill	Flammable liquid. Corrosive liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.		
Section 7. Handling and Storage			
Precautions	Keep locked up. Keep container dry. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapour/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.		
Storage	Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F).		
Section 8. Exposure Controls/Personal Protection			
Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.		
Personal Protection	Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.		
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.		
Exposure Limits	TWA: 10 (ppm) TWA: 25 (mg/m³) Consult local authorities for acceptable exposure limits.		
Section 9. Physical and Chemical Properties			
Physical state and appearance	Liquid. (Clear viscous liquid.)	Odor	Ammoniacal.
Molecular Weight	60.1 g/mole	Taste	Not available.
pH (1% soln/water)	Not available.	Color	Yellow.
Boiling Point	117.2°C (243°F)		
Melting Point	8.5°C (47.3°F)		
Critical Temperature	Not available.		
Specific Gravity	0.8995 (Water = 1)		
Vapor Pressure	10.7 mm of Hg (@ 20°C)		
Vapor Density	2.07 (Air = 1)		
Volatility	100% (v/v).		
Odor Threshold	10.2 ppm		
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Water/Oil Dist. Coeff.	Not available.	
Ionicity (in Water)	Not available.	
Dispersion Properties	See solubility in water.	
Solubility	Easily soluble in cold water.	








Section 10. Stability and Reactivity Data		
Stability	The product is stable.	
Instability Temperature	Not available.	
Conditions of Instability	Not available.	
Incompatibility with various substances	Not available.	
Corrosivity	Non-corrosive in presence of glass.	
Special Remarks on Reactivity	Not available.	
Special Remarks on Corrosivity	Not available.	
Polymerization	No.	

Section 11. Toxicological Information		
Routes of Entry	Dermal contact. Eye contact. Inhalation. Ingestion.	
Toxicity to Animals	WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 470 mg/kg [Guinea pig]. Acute dermal toxicity (LD50): 750 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 424.3 ppm 4 hour(s) [Mouse].	
Chronic Effects on Humans	The substance is toxic to kidneys, lungs, liver, mucous membranes.	
Other Toxic Effects on Humans	Extremely hazardous in case of skin contact (corrosive, irritant, permeator), of ingestion, of inhalation. Very hazardous in case of skin contact (sensitizer).	
Special Remarks on Toxicity to Animals	Not available.	
Special Remarks on Chronic Effects on Humans	Not available.	
Special Remarks on other Toxic Effects on Humans	Not available.	

Section 12. Ecological Information		
Ecotoxicity	Not available.	
BOD5 and COD	Not available.	
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.	
Toxicity of the Products of Biodegradation	The products of degradation are as toxic as the original product.	
Special Remarks on the Products of Biodegradation	Not available.	

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Section 13. Disposal Considerations											
Waste Disposal											
Section 14. Transport Information											
DOT Classification		CLASS 8: Corrosive liquid.									
Identification		: Ethylenediamine : UN1604 PG: II									
Special Provisions for Transport		Not available.									
DOT (Pictograms)											
Section 15. Other Regulatory Information and Pictograms											
Federal and State Regulations		Pennsylvania RTK: Ethylenediamine Massachusetts RTK: Ethylenediamine TSCA 8(b) inventory: Ethylenediamine SARA 302/304/311/312 extremely hazardous substances: Ethylenediamine CERCLA: Hazardous substances.: Ethylenediamine									
California Proposition 65 Warnings											
Other Regulations		OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).									
Other Classifications		WHMIS (Canada) CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC). CLASS E: Corrosive liquid.									
		DSCL (EEC) R10- Flammable. R21/22- Harmful in contact with skin and if swallowed. R35- Causes severe burns. R43- May cause sensitization by skin contact.									
HMIS (U.S.A.)		<table><tr><td>Health Hazard</td><td>3</td></tr><tr><td>Fire Hazard</td><td>3</td></tr><tr><td>Reactivity</td><td>0</td></tr><tr><td>Personal Protection</td><td></td></tr></table>	Health Hazard	3	Fire Hazard	3	Reactivity	0	Personal Protection		National Fire Protection Association (U.S.A.) Health Flammability Reactivity Specific hazard
Health Hazard	3										
Fire Hazard	3										
Reactivity	0										
Personal Protection											
WHMIS (Canada) (Pictograms)											
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DSCL (Europe) (Pictograms)		
TDG (Canada) (Pictograms)		
ADR (Europe) (Pictograms)		
Protective Equipment	 Gloves.  Full suit.  Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.  Face shield.	

Section 16. Other Information

MSDS Code E3320

References Not available.

Other Special Considerations Not available.

Validated by Sonia Owen on 8/11/2006.

Verified by Sonia Owen.

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CALL (310) 516-8000

Notice to Reader

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 materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.