

Section 1. Product and Company Identification

Product Name Ethylenediamine
CAS Number 107-15-3

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Section 2. Hazards Identification

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 3), H226
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Dermal (Category 3), H311
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Respiratory sensitization (Category 1), H334
Skin sensitization (Category 1), H317
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 3), H412

GHS Label Elements

Pictograms:



Signal word: DANGER

Hazard and precautionary statements

Hazard Statements

H226 Flammable liquid and vapor.
H302 + H332 Harmful if swallowed or if inhaled
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



H401 Toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P285 In case of inadequate ventilation wear respiratory protection.
P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P322 Specific measures (see supplemental first aid instructions on this label).
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P361 Remove/Take off immediately all contaminated clothing.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS

Rapidly absorbed through skin.
Lachrymator.

Section 3. Composition / Information on Ingredients

Common Name Ethylenediamine
Synonym(s) 1,2-Diaminoethane
Formula C₂H₈N₂
CAS Number 107-15-3

COMPONENT	CAS NUMBER	CONCENTRATION
Ethylenediamine	107-15-3	<= 100%

Section 4. First Aid Measures

Description of first-aid measures

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Skin contact: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Indication of any immediate medical attention and special treatment needed: No data available

Section 5. Firefighting Measures

Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture: No data available

Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Further information: Use water spray to cool unopened containers.

Section 6. Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures

Wear respiratory protection. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

Reference to other sections: For disposal see section 13.

Section 7. Handling and Storage

Precautions for safe handling: Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Flash back possible over considerable distance. Container explosion may occur under fire conditions. Vapors may form explosive mixture with air. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge. For precautions see section 2.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Air and moisture sensitive. Handle and store under inert gas.

Section 8. Exposure Controls / Personal Protection

Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Ethylenediamine	107-15-3	TWA	10.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Not classifiable as a human carcinogen		Danger of cutaneous absorption
		TWA	10 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Not classifiable as a human carcinogen		Danger of cutaneous absorption



		TWA	10.000000 ppm 25.000000 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate		
		TWA	10 ppm 25 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate		
		TWA	10.000000 ppm 25.000000 mg/m ³	USA. NIOSH Recommended Exposure Limits
		PEL	10 ppm 25 mg/m ³	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

Exposure controls

Appropriate engineering controls: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection: Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection: Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance: Liquid

Odor: No data available

Odor Threshold: No data available

pH: 12.2 at 110 g/l at 20°C (68°F)

Melting point/freezing point: 8.5°C (47.3°F)

Initial boiling point and boiling range: 118°C (244°F)

Flash point (Closed Cup): 38°C (100°F)

Evaporation rate: No data available

Flammability (solid, gas): No data available

Upper/lower flammability or explosive limits

Upper explosion limit: 16% (V)

Lower explosion limit: 2.7% (V)

Vapor pressure: 13 hPa (10 mmHg) at 20°C (68°F)

Vapor density: 2.07 - (Air = 1.0)

Relative density: 0.899 g/mL at 25°C (77°F)

Water solubility: Soluble

Partition coefficient (n-Octanol/water): log Pow: -2.04

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Viscosity: No data available

Explosive properties: No data available

Oxidizing properties: No data available

Other safety information

Relative vapor density: 2.07 - (Air = 1.0)

Section 10. Stability and Reactivity

Reactivity: No data available

Chemical stability: Absorbs carbon dioxide (CO₂) from air. Stable under recommended storage conditions.

Possibility of hazardous reactions: No data available

Conditions to avoid: Air Exposure to moisture. Heat, flames and sparks.

Incompatible materials: Oxidizing agents, Phosphorus halides, Aldehydes, Organic halides

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions: Carbon oxides, Nitrogen oxides (NO_x)



Other decomposition products: No data available
In the event of fire: see section 5

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat: 1,200 mg/kg

Remarks: Behavioral: Ataxia.

LC50 Inhalation - Rat: 14.7 mg/l (4h)

LD50 Dermal - Rabbit: 560 mg/kg

Skin corrosion/irritation

Skin - Rabbit

Result: Causes burns.

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Corrosive

Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: Causes sensitization.

May cause allergic respiratory and skin reactions

Germ cell mutagenicity: No data available

Carcinogenicity

Carcinogenicity - This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product, present at levels greater than or equal to 0.1%, is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product, present at levels greater than or equal to 0.1%, is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product, present at levels greater than or equal to 0.1%, is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: No data available

Specific target organ toxicity - single exposure: No data available

Specific target organ toxicity - repeated exposure: No data available

Aspiration hazard: No data available

Additional Information

RTECS: KH8575000

Vomiting, Diarrhea, Abdominal pain, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence



Section 12. Ecological Information

Toxicity

Toxicity to fish

LC50 - Pimephales promelas (fathead minnow): 115.7 mg/l (96 h)

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea): 3 mg/l (48 h)

NOEC - Daphnia magna (Water flea): 0.16 mg/l (21 d)

Toxicity to algae

EC50 - Pseudokirchneriella subcapitata (green algae): 151 mg/l (96h)

Persistence and degradability

Biodegradability Biotic/Aerobic - Exposure time 28 d

Result: 94% - Readily biodegradable

Bioaccumulative potential: No data available

Mobility in soil: No data available

Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life. Avoid release to the environment.

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

DOT (US)

UN Number: 1604

Class: 8(3)

Packing group: II

Proper shipping name: Ethylenediamine

Reportable Quantity (RQ): 5000 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1604

Class: 8(3)

Packing group: II

EMS-No: F-E, S-C

Proper shipping name: Ethylenediamine



IATA

UN number: 1604

Class: 8(3)

Packing group: II

Proper shipping name: Ethylenediamine

Section 15. Regulatory Information

SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:
Ethylenediamine (CAS-No. 107-15-3)

Revision Date: 2007-03-01

SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards: Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right to Know Components

Ethylenediamine (CAS-No. 107-15-3)

Revision Date: 2007-03-01

Pennsylvania Right to Know Components

Ethylenediamine (CAS-No. 107-15-3)

Revision Date: 2007-03-01

New Jersey Right to Know Components

Ethylenediamine (CAS-No. 107-15-3)

Revision Date: 2007-03-01

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16. Other Information

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

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