



Material Safety Data Sheet

Ethylenediamine

MSDS# 96094

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethylenediamine  
 Catalog Numbers: E479-4, E479-500, S80006  
 Synonyms: 1,2-Diaminoethane; 1,2-Ethanediamine; Dimethylenediamine; EDA.

Company Identification: Acros Organics BVBA  
 Janssen Pharmaceuticaaan 3a  
 2440 Geel, Belgium

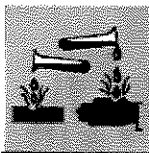
Company Identification: (USA) Acros Organics  
 One Reagent Lane  
 Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01  
 For information in Europe, call: +32 14 57 52 11  
 Emergency Number, Europe: +32 14 57 52 99  
 Emergency Number US: 201-796-7100  
 CHEMTREC Phone Number, US: 800-424-9300  
 CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#: 107-15-3  
 Chemical Name: Ethylenediamine  
 %: >98  
 EINECS#: 203-468-6

Hazard Symbols: C



Risk Phrases: 10 21/22 34 42/43

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Danger! Flammable liquid and vapor. Harmful if absorbed through the skin. Hygroscopic (absorbs moisture from the air). Causes eye and skin burns. Causes digestive and respiratory tract burns. May cause allergic respiratory and skin reaction.

May be harmful if swallowed or inhaled. Target Organs: Kidneys, liver, lungs, eyes, skin, mucous membranes.

Potential Health Effects

- Eye: Causes eye burns. Low vapor concentrations may cause a temporary visual disturbance known as 'blue haze' or 'halo vision'. Lachrymator (substance which increases the flow of tears).
- Skin: Harmful if absorbed through the skin. Causes skin burns. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
- Ingestion: Causes gastrointestinal tract burns. May cause liver and kidney damage. May be harmful if swallowed.
- Inhalation: May cause severe allergic respiratory reaction. Irritation may lead to chemical pneumonitis and pulmonary edema. May cause liver and kidney damage. Causes chemical burns to the respiratory tract. May cause asthma.
- Chronic: May cause liver and kidney damage. Repeated exposure may cause allergic respiratory reaction (asthma).

#### Section 4 - First Aid Measures

**Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

**Skin:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

**Ingestion:** If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:** Treat symptomatically and supportively.

#### Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

**Extinguishing Media:** Solid streams of water may be ineffective and spread material. Use water spray, dry chemical, "alcohol resistant" foam, or carbon dioxide.

Autoignition Temperature: 385 deg C ( 725.00 deg F)

Flash Point: 34 deg C ( 93.20 deg F)

Explosion Limits: Lower: 2.6 vol %

Explosion Limits: Upper: 14.2 vol %

NFPA Rating: health: 3; flammability: 3; instability: 0;

#### Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Evacuate unnecessary personnel. Approach spill from upwind. Use water spray to cool and disperse vapors, protect personnel, and dilute spills to form nonflammable mixtures.

#### Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Do not breathe vapor or mist. Use only with adequate ventilation or respiratory protection.

**Storage:** Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Store protected from moisture. Store under nitrogen. Do not store in copper or copper alloy storage vessels.

#### Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethylenediamine	10 ppm; Skin - potential significant contribution to overall exposure by the cutaneous route	10 ppm TWA; 25 mg/m3 TWA 1000 ppm IDLH	10 ppm TWA; 25 mg/m3 TWA

OSHA Vacated PELs: Ethylenediamine: 10 ppm TWA; 25 mg/m3 TWA

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a

Respirators: NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Viscous liquid

Color: clear, colorless

Odor: ammonia-like

pH: 11.9 (25% aq soln)

Vapor Pressure: 12 mm Hg @ 25 deg C

Vapor Density: 2.07 (air=1)

Evaporation Rate: 0.91 (butyl acetate=1)

Viscosity: 1.54 mPas 25 deg C

Boiling Point: 118 deg C @ 760 mmHg ( 244.40°F)

Freezing/Melting Point: 8.5 deg C ( 47.30°F)

Decomposition Temperature:

Solubility in water: Soluble

Specific Gravity/Density: .8980 g/ml

Molecular Formula: C<sub>2</sub>H<sub>8</sub>N<sub>2</sub>

Molecular Weight: 60.1

Section 10 - Stability and Reactivity

Chemical Stability: Absorbs carbon dioxide from air to form nonvolatile carbonate.

Conditions to Avoid: Ignition sources, moisture, excess heat, confined spaces.

Incompatibilities with Other Materials Strong oxidizing agents, strong acids, copper, copper alloys.

Hazardous Decomposition Products Nitrogen oxides, carbon monoxide, carbon dioxide, ammonia and/or derivatives.

Hazardous Polymerization Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 107-15-3: KH8575000

RTECS:

**CAS# 107-15-3:** Draize test, rabbit, eye: 750 ug Severe;

Draize test, rabbit, eye: 750 ug/24H Severe;

Inhalation, mouse: LC50 = 300 mg/m3;

LD50/LC50: Oral, mouse: LD50 = 1 gm/kg;

Oral, rat: LD50 = 1200 mg/kg;

Skin, rabbit: LD50 = 730 uL/kg;

Other: Skin, rabbit, LD50: 730 uL/kg = 649.7 mg/kg; Vapor concentrations of 4000 ppm for 8 hours killed 6/6 rats, while 2000 ppm produced no lethality (Doc of TLV).

Carcinogenicity: Ethylenediamine - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: LC50 = 115.7 mg/L; 96 Hr.; Static Condition  
Fish: Rainbow trout: LC50 = 230.0 mg/L; 96 Hr.; Static Condition  
Water flea EC50 = 0.88 mg/L; 48 Hr.; Unspecified  
Bacteria: Phytobacterium phosphoreum: EC50 = 20.0 mg/L; 15 Minutes; Microtox test

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: ETHYLENEDIAMINE

Hazard Class: 8

UN Number: UN1604

Packing Group: II

Canada TDG

Shipping Name: ETHYLENEDIAMINE

Hazard Class: 8.61

UN Number: UN1604

Packing Group: II

USA RQ: CAS# 107-15-3: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: C

Risk Phrases:

R 10 Flammable.

R 21/22 Harmful in contact with skin and if swallowed.

R 34 Causes burns.

R 42/43 May cause sensitization by inhalation and skin contact.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 107-15-3: 2

Canada

CAS# 107-15-3 is listed on Canada's DSL List

Canadian WHMIS Classifications: B2, D1B, D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 107-15-3 is listed on Canada's Ingredient Disclosure List

US Federal

TSCA

CAS# 107-15-3 is listed on the TSCA

Inventory.

**REVIEWED**

DATE: MAY 16/2012

*Chatterford*

Section 16 - Other Information

MSDS Creation Date: 5/10/1999

Revision #10 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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