

**SIGMA-ALDRICH****Material Safety Data Sheet**

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 Version 1.30

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Section 1 - Product and Company Information

| | | | |
|---------------------------|-----------------------------------|------------------|------------------------|
| Product Name | ETHANOLAMINE, 99+, A.C.S. REAGENT | | |
| Product Number | 398136 | | |
| Brand | Aldrich Chemical | | |
| Company | Sigma-Aldrich | | |
| Street Address | 3050 Spruce Street | | |
| City, State, Zip, Country | SAINT LOUIS, MO 63103 US | | |
| Technical Phone: | 314 771 5765 | Emergency Phone: | 414 273 3850 Ext. 5996 |
| Fax: | 800 325 5052 | | |

Section 2 - Composition/Information on Ingredient

| | | |
|----------------|--|----------|
| Substance Name | CAS # | SARA 313 |
| 2-AMINOETHANOL | 141-43-5 | No |
| Formula | C ₂ H ₇ NO | |
| Synonyms | Aethanolamin (German), 2-Aminoethanol (German), 2-Aminoetanol (Italian), 2-Aminoethanol (OSHA), beta-Aminoethyl alcohol, Colamine, Etanolamina (Italian), Ethanolamine, beta-Ethanolamine, Ethanolamine (ACGIH:OSHA), Ethylolamine, Glycinol, beta-Hydroxyethylamine, 2-Hydroxyethylamine, Kolamin (Czech), Monoethanolamin (German), Monoethanolamine, Olamine, Thiofaco M-50, USAF EK-1597 | |

Section 3 - Hazards Identification

Emergency Overview
 Corrosive.
 Causes burns. Harmful by inhalation, in contact with skin and if swallowed.
 Readily absorbed through skin. Combustible.

HMIS Rating
 Health: 3 Flammability: 2 Reactivity: 1

NFPA Rating
 Health: 3 Flammability: 2 Reactivity: 1

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
 If swallowed, wash out mouth with water provided person is conscious. Call a physician. Do not induce vomiting.

Inhalation Exposure
 If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure
 In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

| | | |
|--------------------|--------------|-------------|
| Flash Point: | 199.4 °F | 93 °C |
| Explosion Limits: | Lower: 2.5 % | Upper: 17 % |
| Autoignition Temp: | 780 °C | |

Extinguishing Media

Suitable
 Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting

Protective Equipment
 Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s)
 Combustible liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
 Evacuate area.

Procedure(s) of Personal Precaution(s)
 Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling
User Exposure
 Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

Storage
Suitable
 Keep tightly closed. Store in a cool dry place.

Special Requirements
 Hydroscopic.

Section 8 - Exposure Controls / PPE

Engineering Controls
 Safety shower and eye bath. Use only in a chemical fume hood.

Personal Protective Equipment
Respiratory
 Government approved respirator.
Hand
 Compatible chemical-resistant gloves.
Eye
 Chemical safety goggles.

Other
Faceshield (8-inch minimum).

General Hygiene Measures

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

Exposure Limits

| Country | Type | Value |
|---------|-------|----------|
| Poland | NDS | 3 MG/M3 |
| Poland | NDSCh | 10 MG/M3 |
| Poland | NDSP | |

Exposure Limits, RTECS

| Country | Source | Type | Value |
|---------------------------------|-------------------|---------|------------------------|
| USA | ACGIH | STEL | 6 PPM |
| USA | ACGIH | TWA | 3 PPM |
| USA | MSHA Standard-air | TWA | 3 PPM (6 MG/M3) |
| USA | OSHA | PEL | 8H TWA 3 PPM (6 MG/M3) |
| New Zealand | OEL | | |
| Remarks: check ACGIH TLV | | | |
| USA | NIOSH | TWASTEL | 3 PPM 6 PPM |

Section 9 - Physical/Chemical Properties

| Appearance | Color |
|--|-----------|
| Physical State Clear viscous liquid | Colorless |

Molecular Weight: 61.08 AMU

| Property | Value | At Temperature or Pressure |
|-----------------------|-----------------------------|--|
| pH | N/A | |
| BP/BP Range | 69 - 70 °C | 10 mmHg |
| MP/MP Range | 10 °C | |
| Freezing Point | N/A | |
| Vapor Pressure | 0.2 mmHg | |
| Vapor Density | 2.1 g/l | 20 °C |
| Saturated Vapor Conc. | N/A | |
| SG/Density | 1.015 g/cm3 | |
| Bulk Density | N/A | |
| Odor Threshold | N/A | |
| Volatile% | N/A | |
| VOC Content | N/A | |
| Water Content | < 0.2 % | |
| Solvent Content | N/A | |
| Evaporation Rate | N/A | |
| Viscosity | N/A | |
| Partition Coefficient | N/A | |
| Decomposition Temp. | N/A | |
| Flash Point °F | 199.4 °F | |
| Flash Point °C | 93 °C | |
| Explosion Limits | Lower: 2.5 % Upper: 17 % | Method: closed cup Method: closed cup |
| Flammability | N/A | |
| Autoignition Temp | 780 °C | |
| Refractive Index | 1.454 | |

Solubility N/A

N/A = not available

Section 10 - Stability and Reactivity

Stability

Conditions of Instability
Absorbs carbon dioxide from air

Conditions to Avoid

Protect from moisture.

Materials to Avoid
Galvanized iron, Oxidizing agents, Copper.

Hazardous Decomposition Products

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide.

Hazardous Polymerization

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

Causes burns.

Skin Absorption

Harmful if absorbed through skin.

Eye Contact

Causes burns.

Inhalation

Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Harmful if inhaled.

Ingestion

Harmful if swallowed.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

RTECS Number: KJ5775000

Toxicity Data

Oral - Rat: 1,720 mg/kg (LD50)

Intraperitoneal - Rat: 67 MG/KG (LD50)

Subcutaneous - Rat: 1500 MG/KG (LD50)

Intravenous - Rat: 225 MG/KG (LD50)

Remarks: Behavioral: Somnolence (general depressed activity).

Behavioral: Muscle contraction or spasticity.

Lungs, Thorax, or Respiration: Dyspnea.

Intramuscular - Rat: 1750 MG/KG (LD50)

Oral - Mouse: 700 mg/kg (LD50)

Remarks: Behavioral: Somnolence (general depressed activity).

Behavioral: Muscle contraction or spasticity.

Lungs, Thorax, or Respiration: Dyspnea.

Intraperitoneal - Mouse: 50 MG/KG (LD50)

Oral - Rabbit: 1,000 mg/kg (LD50)

Skin - Rabbit: 1 ML/KG (LD50)
Oral - Guinea pig: 620 mg/kg (LD50)

Irritation Data

Skin - Rabbit: 505 mg
Remarks: Open irritation test
Eyes - Rabbit: 0.25 mg
Remarks: Severe irritation effect

Chronic Exposure - Teratogen

| Species | Dose | Route of Application | Exposure Time |
|---|-----------|----------------------|---------------|
| Rat | 500 MG/KG | Oral | (6-15D PREG) |
| Result:Effects on Embryo or Fetus: Fototoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death. Specific Developmental Abnormalities: Musculoskeletal system. | | | |
| Rat | 500 MG/KG | Oral | (6-15D PREG) |
| Result:Specific Developmental Abnormalities: Urogenital system. | | | |

Chronic Exposure - Mutagen

| Species | Dose | Cell Type | Mutation test |
|---------|------------|------------|---------------------------|
| Human | 100 UMOL/L | lymphocyte | Cytogenetic analysis |
| Human | 1 MMOL/L | lymphocyte | Sister chromatid exchange |

Chronic Exposure - Reproductive Hazard

| Species | Dose | Route of Application | Exposure Time |
|---------|------------|----------------------|---------------|
| Rat | 4500 MG/KG | Oral | (6-15D PREG) |
| Rat | 2250 MG/KG | Skin | (6-15D PREG) |

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Ethanolamine [or] Ethanolamine solutions
UN#: 2491
Class: 8
Packing Group: Packing Group III
Hazard Label: Corrosive
PIH: Not PIH

IATA

Proper Shipping Name: Ethanolamine
IATA UN Number: 2491
Hazard Class: 8
Packing Group: III

Section 15 - Regulatory Information

EU Directives Classification

Symbol of Danger: Xn
Indication of Danger
Harmful.
Risk Statements R: 20 36/37/38
Harmful by inhalation. Irritating to eyes, respiratory system, and skin.

US Classification and Label Text

Indication of Danger
Corrosive.
Risk Statements
Causes burns. Harmful by inhalation, in contact with skin and if swallowed.

Safety Statements

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements
Readily absorbed through skin. Combustible.

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

Canada Regulatory Information

WHMIS Classification
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.
DSL: Yes
NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

