National Transportation Safety Board
Office of Highway Safety
Washington, DC 20594

HWY24MH013

# HAZARDOUS MATERIALS ATTACHMENT

Safety Data Sheet (SDS) - Amines, Liquid, Corrosive, N.O.S.

(8 Pages)

# SAFETY DATA SHEET

BRENNTAG

## 1. Identification

**Other means of identification** None known.

**Product identifier** **MONOISOPROPANOLAMINE**

**Other means of identification**

**CAS number** 78-96-6

**Recommended use** ALL PROPER AND LEGAL PURPOSES

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

**Company name** Brenntag Great Lakes, LLC

**Address** 4420 N. Harley Davidson Ave.
Wauwatosa, WI 53225

**Telephone** 262-252-3550

**E-mail** Not available.

**Emergency phone number** 800-424-9300 CHEMTREC

## 2. Hazard(s) identification

| | | |
|---|---|---|
| **Physical hazards** | Flammable liquids | Category 4 |
| **Health hazards** | Acute toxicity, dermal | Category 4 |
| | Skin corrosion/irritation | Category 1B |
| | Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified.

**OSHA defined hazards** Not classified.

**Label elements**

**Signal word** Danger

**Hazard statement** Combustible liquid. Harmful in contact with skin. Causes severe skin burns and eye damage. Causes serious eye damage.

**Precautionary statement**

**Prevention** Keep away from flames and hot surfaces. - No smoking. Do not breathe dust or mists. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

**Response** If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of fire: Use appropriate media to extinguish.

**Storage** Store in a well-ventilated place. Keep cool. Store locked up.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** None.

## 3. Composition/information on ingredients

**Substances**

| Chemical name | Common name and synonyms | CAS number | % |
|---|---|---|---|
| 1-Aminopropan-2-ol | | 78-96-6 | <= 100 |

## 4. First-aid measures

**Inhalation**
Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**
Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

**Eye contact**
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

**Ingestion**
Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Most important symptoms/effects, acute and delayed**
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

**Indication of immediate medical attention and special treatment needed**
Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**General information**
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

## 5. Fire-fighting measures

**Suitable extinguishing media**
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media**
Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical**
The product is combustible, and heating may generate vapors which may form explosive vapor/air mixtures. During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions**
In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

**Specific methods**
Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards**
Combustible liquid.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**
Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

**Environmental precautions**
Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

**Precautions for safe handling**
Keep away from open flames, hot surfaces and sources of ignition. Do not get in eyes, on skin, or on clothing. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

| | |
|---|---|
| **Conditions for safe storage, including any incompatibilities** | Store locked up. Keep away from heat, sparks and open flame. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS). |

## 8. Exposure controls/personal protection

| | |
|---|---|
| **Occupational exposure limits** | No exposure limits noted for ingredient(s). |
| **Biological limit values** | No biological exposure limits noted for the ingredient(s). |
| **Appropriate engineering controls** | Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product. |

**Individual protection measures, such as personal protective equipment**

The following are recommendations for Personnel Protective Equipment (PPE). The employer/user of this product must perform a Hazard Assessment of the workplace according to OSHA regulations 29 CFR 1910.132 to determine the appropriate PPE for use while performing any task involving potential exposure to this product.

| | |
|---|---|
| **Eye/face protection** | Wear safety glasses with side shields (or goggles) and a face shield. Face shield is recommended. |
| **Skin protection** | |
| **Hand protection** | Wear appropriate chemical resistant gloves. |
| **Other** | Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. |
| **Respiratory protection** | If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. |
| **Thermal hazards** | Wear appropriate thermal protective clothing, when necessary. |
| **General hygiene considerations** | When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |

## 9. Physical and chemical properties

| | |
|---|---|
| **Appearance** | |
| **Physical state** | Liquid. |
| **Form** | Liquid. |
| **Color** | COLORLESS |
| **Odor** | AMMONIACAL |
| **Odor threshold** | Not available. |
| **pH** | 11.4 |
| **Melting point/freezing point** | 34 °F (1.11 °C) |
| **Initial boiling point and boiling range** | 319.03 °F (159.46 °C) 1013.1 hPa |
| **Flash point** | 176.0 °F (80.0 °C) |
| **Evaporation rate** | Not available. |
| **Flammability (solid, gas)** | Not applicable. |
| **Upper/lower flammability or explosive limits** | |
| **Explosive limit - lower (%)** | Not available. |
| **Explosive limit - upper (%)** | Not available. |
| **Vapor pressure** | Not available. |
| **Vapor density** | 2.6 |
| **Relative density** | Not available. |
| **Solubility(ies)** | |
| **Solubility (water)** | Not available. |
| **Partition coefficient (n-octanol/water)** | -0.96 |
| **Auto-ignition temperature** | 705.2 °F (374 °C) |
| **Decomposition temperature** | Not available. |

| | |
|---|---|
| **Viscosity** | Not available. |
| **Other information** | |
| **Density** | 8.01 lbs/gal<br>0.96 g/ml |
| **Explosive properties** | Not explosive. |
| **Flammability class** | Combustible IIIA estimated |
| **Molecular formula** | C3-H9-N-O |
| **Molecular weight** | 75.11 g/mol |
| **Oxidizing properties** | Not oxidizing. |
| **Specific gravity** | 0.96 |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **Chemical stability** | Material is stable under normal conditions. |
| **Possibility of hazardous reactions** | Hazardous polymerization does not occur. |
| **Conditions to avoid** | Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials. |
| **Incompatible materials** | Strong oxidizing agents. Peroxides. Phenols. |
| **Hazardous decomposition products** | No hazardous decomposition products are known. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Inhalation** | May cause irritation to the respiratory system. |
| **Skin contact** | Causes severe skin burns. Harmful in contact with skin. |
| **Eye contact** | Causes serious eye damage. |
| **Ingestion** | Causes digestive tract burns. |
| **Symptoms related to the physical, chemical and toxicological characteristics** | Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. |

**Information on toxicological effects**

**Acute toxicity** Harmful in contact with skin.

| Product | Species | Test Results |
|---|---|---|
| 1-Aminopropan-2-ol (CAS 78-96-6) | | |
| **Acute** | | |
| **Oral** | | |
| LD50 | Rat | 4.26 g/kg |

| | |
|---|---|
| **Skin corrosion/irritation** | Causes severe skin burns and eye damage. |
| **Serious eye damage/eye irritation** | Causes serious eye damage. |
| **Respiratory or skin sensitization** | |
| **Respiratory sensitization** | Due to partial or complete lack of data the classification is not possible. |
| **Skin sensitization** | Due to partial or complete lack of data the classification is not possible. |
| **Germ cell mutagenicity** | Due to partial or complete lack of data the classification is not possible. |
| **Carcinogenicity** | Due to partial or complete lack of data the classification is not possible. |

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**US. National Toxicology Program (NTP) Report on Carcinogens**

Not listed.

**Reproductive toxicity** Due to partial or complete lack of data the classification is not possible.

| | |
|---|---|
| **Specific target organ toxicity - single exposure** | Due to partial or complete lack of data the classification is not possible. |
| **Specific target organ toxicity - repeated exposure** | Due to partial or complete lack of data the classification is not possible. |
| **Aspiration hazard** | Due to partial or complete lack of data the classification is not possible. |

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

| Product | | Species | Test Results |
|---|---|---|---|
| 1-Aminopropan-2-ol (CAS 78-96-6) | | | |
| **Aquatic** | | | |
| *Acute* | | | |
| Fish | LC50 | Goldfish (Carassius auratus) | 210 mg/l, 96 hours |

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential**

**Partition coefficient n-octanol / water (log Kow)**
-0.96

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

| | |
|---|---|
| **Disposal instructions** | Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| **Local disposal regulations** | Dispose in accordance with all applicable regulations. |
| **Hazardous waste code** | D002: Waste Corrosive material [pH ≤2 or =>12.5, or corrosive to steel]<br>The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| **Contaminated packaging** | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. Transport information

**DOT**

| | |
|---|---|
| **UN number** | UN2735 |
| **UN proper shipping name** | AMINES, LIQUID, CORROSIVE, N.O.S. (MONOISOPROPANOLAMINE) |
| **Transport hazard class(es)** | |
| **Class** | 8 |
| **Subsidiary risk** | - |
| **Packing group** | II |
| **Environmental hazards** | |
| **Marine pollutant** | No. |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |

Transport information on packaging may be different from that listed. Transportation information on packaging may be different from that listed.

**DOT**

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Toxic Substances Control Act (TSCA)**

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories**
Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace**

1-Aminopropan-2-ol (CAS 78-96-6) Low priority

**US state regulations** The product "monoisopropanolamine" contains components, which are to the best of our knowledge listed on the RTK PA and NJ.

**California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Industrial Chemicals (AICIS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| Taiwan | Taiwan Chemical Substance Inventory (TCSI) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

**Issue date** 04-10-2015

**Revision date** 06-14-2023

**Version #** 16

**HMIS® ratings** Health: 3
Flammability: 2
Physical hazard: 0

**NFPA ratings** Health: 3
Flammability: 2
Instability: 0

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**Revision information** This document has undergone significant changes and should be reviewed in its entirety.