Section 1 - Chemical Product and Company Identification

MSDS Name: Ethanolamine
Catalog Numbers: 14958-0000, 14958-0010, 14958-0025, 14958-0200, 14958-0250
Synonyms: 2-Aminoethanol

Company Identification: Acros Organics BVBA
Janssen Pharmaceuticalalaan 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

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name:</th>
<th>%</th>
<th>EINECS#</th>
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<tbody>
<tr>
<td>141-43-5</td>
<td>Ethanolamine</td>
<td>99%</td>
<td>205-483-3</td>
</tr>
</tbody>
</table>

Hazard Symbols: C

Risk Phrases: 20/21/22 34

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Harmful by inhalation, in contact with skin and if swallowed. Causes burns.

Potential Health Effects
Eye: Causes eye burns.
Skin: Harmful if absorbed through the skin. Causes skin burns.
Ingestion: Harmful if swallowed. Causes gastrointestinal tract burns.
Inhalation: Harmful if inhaled. Causes chemical burns to the respiratory tract.

Section 4 - First Aid Measures
Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Get medical aid immediately. Wash mouth out with water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:

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. Will burn if involved in a fire. Combustible liquid.

Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.

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.

Section 7 - Handling and Storage

Handling: Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes.

Storage: Store in a cool, dry place. Store in a tightly closed container. Store under nitrogen.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

CAS# 141-43-5:

- United Kingdom, WEL - TWA: 3 ppm TWA; 7.6 mg/m3 TWA
- United Kingdom, STEL: 6 ppm STEL; 15 mg/m3 STEL
- United States OSHA: 3 ppm TWA; 6 mg/m3 TWA
- Belgium - TWA: 3 ppm VLE; 7.6 mg/m3 VLE
- Belgium - STEL: 6 ppm VLE; 15 mg/m3 VLE
- France - VME: 3 ppm VME; 8 mg/m3 VME
- Germany: 2 ppm TWA; 5.1 mg/m3 TWA
- Germany: skin notation
- Japan: 3 ppm OEL; 7.5 mg/m3 OEL
- Malaysia: 3 ppm TWA; 7.5 mg/m3 TWA
- Netherlands: 3 ppm STEL; 7.6 mg/m3 STEL
- Netherlands: 1 ppm MAC; 2.5 mg/m3 MAC
- Spain: 3 ppm VLA-ED; 7.5 mg/m3 VLA-ED
- Spain: 6 ppm VLA-EC; 15 mg/m3 VLA-EC

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.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a 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:** Clear liquid

**Color:** APHA: 15 max

**Odor:** ammonia-like

**pH:** Not available

**Vapor Pressure:** 0.48mmHg @20 deg C

**Viscosity:** 24 cP @20 deg C

**Boiling Point:** 170 deg C @760mmHg (338.00°F)

**Freezing/Melting Point:** 10.3 deg C (50.54°F)

**Autoignition Temperature:** 450 deg C (842.00 deg F)

**Flash Point:** 85 deg C (185.00 deg F)

**Explosion Limits:**
- **Lower:** 5.5 Vol %
- **Upper:** 17 Vol %

**Decomposition Temperature:** Not available

**Solubility in water:** Miscible

**Specific Gravity/Density:** 1.012

**Molecular Formula:** C2H7NO

**Molecular Weight:** 61.08

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**Section 10 - Stability and Reactivity**

**Chemical Stability:** Stable under normal temperatures and pressures. Air sensitive. Hygroscopic: absorbs moisture or water from the air.

**Conditions to Avoid:** Incompatible materials, light, exposure to air, exposure to moist air or water.

**Incompatibilities with Other Materials:** Oxidizing agents, acids, acid chlorides, aluminum, anhydrides, copper, galvanized iron.

**Hazardous Decomposition Products:** Nitrogen oxides, carbon monoxide, carbon dioxide.

**Hazardous Polymerization:** Has not been reported.

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**Section 11 - Toxicological Information**

**RTECS#:** CAS# 141-43-5: KJ5775000

**LD50/LC50:**

**CAS# 141-43-5:** Draize test, rabbit, eye: 250 ug Severe;
Oral, mouse: LD50 = 700 mg/kg;
Oral, rabbit: LD50 = 1 gm/kg;
Oral, rat: LD50 = 1720 mg/kg;
Skin, rabbit: LD50 = 1 mL/kg;

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

**Other:** See actual entry in RTECS for complete information.

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**Section 12 - Ecological Information**

**Ecotoxicity:** Not available

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**Section 13 - Disposal Considerations**

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

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**Section 14 - Transport Information**

<table>
<thead>
<tr>
<th>Shipping Name:</th>
<th>IATA</th>
<th>IMO</th>
<th>RID/ADR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHANOLAMINE</td>
<td>ETHANOLAMINE</td>
<td>ETHANOLAMINE</td>
<td></td>
</tr>
</tbody>
</table>
Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: C
Risk Phrases:
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R 34 Causes burns.

Safety Phrases:
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# 141-43-5: 1

Canada
CAS# 141-43-5 is listed on Canada's DSL List

US Federal

TSCA
CAS# 141-43-5 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 7/16/1996
Revision #2 Date: 5/30/2005

Revisions were made in Sections: General revision.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility 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.