MATERIAL SAFETY DATA SHEET
N-Methyldiethanolamine

Section 1 - Chemical Product and Company Identification

MSDS Name: N-Methyldiethanolamine, 99+%  
Synonyms: MDEA; 2,2’-(Methylimino)diethanol  
Company Identification: (INDIA) Veritas House, 70 Mint Road, Fort, Mumbai - 400 001. INDIA  
For information in the INDIA, call: Tel: +91 - 22 - 2275 5555 / 6184 0000, Fax: +91 - 22 - 2275 5556 / 6184 0001

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name:</th>
<th>%</th>
<th>EINECS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>105-59-9</td>
<td>N-Methyldiethanolamine</td>
<td>99+</td>
<td>203-312-7</td>
</tr>
</tbody>
</table>

Hazard Symbols: XI

Risk Phrases: 36

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Irritating to eyes.

Potential Health Effects

Eye: Causes eye irritation.
Skin: May cause skin irritation. May be harmful if absorbed through the skin.
Ingestion: May cause irritation of the digestive tract.
Inhalation: May cause respiratory tract irritation. May be harmful if inhaled.
Chronic:

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.

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

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

Inhalation: Remove from exposure and move to fresh air immediately.

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.

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 eyes, skin, and clothing.

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

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# 105-59-9:  

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

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: colorless - light yellow

Odor: amine-like

pH: 11.5(100g/l aq.sol.)

Vapor Pressure: 0.026 mbar @ 40 deg C

Viscosity: 101mPa.s @ 20 deg C

Boiling Point: 243 deg C @ 760mmHg (469.40°F)

Freezing/Melting Point: -21 deg C (-5.80°F)

Autoignition Temperature: 265 deg C (509.00 deg F)

Flash Point: 137 deg C (278.60 deg F)

Explosion Limits: Lower: 0.9 vol %

Explosion Limits: Upper: 8.4 vol %

Decomposition Temperature: Not available

Solubility in water: Miscible

Specific Gravity/Density: 1.0380 g/cc

Molecular Formula: C5H13NO2

Molecular Weight: 119.16
Section 10 - Stability and Reactivity

| Chemical Stability               | Not available |
| Conditions to Avoid              | Incompatible materials. |
| Incompatibilities with Other Materials | Incompatible materials, acids. |
| Hazardous Decomposition Products | Nitrogen oxides, carbon monoxide, carbon dioxide, nitrogen. |
| Hazardous Polymerization         | Has not been reported. |

Section 11 - Toxicological Information

<table>
<thead>
<tr>
<th>RTECS#</th>
<th>CAS# 105-59-9: KL7525000</th>
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</thead>
<tbody>
<tr>
<td>LD50/LC50</td>
<td>RTECS: <strong>CAS# 105-59-9:</strong> Draize test, rabbit, eye: 5 uL Mild; Draize test, rabbit, skin: 500 uL Mild; Oral, rat: LD50 = 1945 mg/kg; Skin, rabbit: LD50 = 5990 uL/kg; Other:</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>N-Methyldiethanolamine - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.</td>
</tr>
<tr>
<td>Other</td>
<td>See actual entry in RTECS for complete information. Mutagenicity: Ames-test: negative.</td>
</tr>
</tbody>
</table>

Section 12 - Ecological Information

<table>
<thead>
<tr>
<th>Ecotoxicity</th>
<th>Daphnia: EC50: 233 mg/l; 48H; acute Algae: EC50: 37 mg/l; 72H; . Bacteria: EC50: 410 mg/l; 17H; . Fish: Leuciscus idus: LC50: &gt;1000 &lt;2200 mg/l; 96H;</th>
</tr>
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<tbody>
<tr>
<td>Other</td>
<td>Biodegradable. log Pow: -1.08</td>
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</table>

Section 13 - Disposal Considerations

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

Section 14 - Transport Information

<table>
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<th>IATA</th>
<th>IMO</th>
<th>RID/ADR</th>
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<td>Not available</td>
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<tr>
<td>Hazard Class:</td>
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<tr>
<td>UN Number:</td>
<td></td>
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<tr>
<td>Packing Group:</td>
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</table>

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XI

Risk Phrases:

- R 36 Irritating to eyes.

Safety Phrases:

- S 24 Avoid contact with skin.

WGK (Water Danger/Protection)

- CAS# 105-59-9: 1

Canada

- CAS# 105-59-9 is listed on Canada’s DSL List

US Federal
Section 16 - Other Information

MSDS Creation Date: July 22, 2015
Revision #0 Date

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