nora® 365 B
Safety Data Sheet
According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Revision Date: 05/13/2015
Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier
Product Form: Mixture
Product Name: nora® 365 B

1.2. Intended Use of the Product
Recommended Use: Adhesive.
Restrictions on Use: N.A.

1.3. Name, Address, and Telephone of the Responsible Party
Company
nora systems, Inc.
9 Northeastern Blvd
Salem, NH 03079
T 800-332-NORA
www.nora.com/us

1.4. Emergency Telephone Number
Emergency Number: 800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (CAN)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture
Classification (GHS-US)
Acute Tox. 4 Harmful if swallowed.
Acute Tox. 4 Harmful in contact with skin.
Skin Corr. 1B Causes severe skin burns and eye damage.
Eye Dam. 1 Causes serious eye damage.
Resp. Sens. 1 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens. 1A May cause an allergic skin reaction.
Repr. 2 Suspected of damaging fertility or the unborn child if inhaled.
Aquatic Acute 1 Very toxic to aquatic life.
Aquatic Chronic 1 Very toxic to aquatic life with long lasting effects.

2.2. Label Elements
GHS-US Labeling
Hazard Pictograms (GHS-US):

Signal Word (GHS-US): Danger
Hazard Statements (GHS-US):
H302 - Harmful if swallowed.
H312 - Harmful in contact with skin.
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H361 - A Suspected of damaging fertility or the unborn child if inhaled.
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary Statements (GHS-US):
P201 - Obtain special instructions before use.
P02 - Do not handle until all safety precautions have been read and understood.
P260.B - Do not breathe dust.
P264.2 - Wash skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P284 - [In case of inadequate ventilation] wear respiratory protection.
P301+P312.A - IF SWALLOWED: Call a POISON CENTER if you feel unwell.
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352.A - IF ON SKIN: Wash with plenty of water.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310.A - Immediately call a POISON CENTER.
P311.A - Specific treatment (see supplementary instructions on this label)
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P342+P311.B - If experiencing respiratory symptoms: Call a doctor.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P391 - Collect spillage.
P405 - Store locked up.
P501.A - Dispose of contents/container in accordance with applicable regulations.

2.3. Ingredients With Unknown Acute Toxicity
None.

2.4. Hazards Not Otherwise Classified Identified During the Classification Process
None.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances
N.A.

3.2. Mixtures
Hazardous components within the meaning of 29 CFR 910.1200 and related classification.

List of Components:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Name</th>
<th>Identification Number</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-70 %</td>
<td>4-Nonylphenol, branched</td>
<td>CAS:84852-15-3 EC:284-325-5 Index:601-053-00-8</td>
<td>Repr. 2, H361; Skin Corr. 1B, H314; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302</td>
</tr>
<tr>
<td>10-20 %</td>
<td>Aminoethylpiperazine</td>
<td>CAS:140-31-8</td>
<td>Acute Tox. 3, H311; Acute Tox. 4, H302; Skin Corr. 1B, H314; Skin Sens. 1, H317; Aquatic Chronic 3, H412</td>
</tr>
<tr>
<td>10-20 %</td>
<td>Fatty acids, C18-unsaturated, dimers, reaction products with Polyethylenepolyamines</td>
<td>CAS:68410-23-1</td>
<td>Skin Irrit. 2, H315; Eye Dam. 1, H318; Aquatic Chronic 2, H411</td>
</tr>
<tr>
<td>1-5 %</td>
<td>2,4,6-Tri(dimethylaminomethyl)phenol</td>
<td>CAS:90-72-2</td>
<td>Skin Corr. 1B, H314; Skin Sens. 1A, H317; Aquatic Chronic 3, H412</td>
</tr>
<tr>
<td>1-5 %</td>
<td>Triethylene tetramine</td>
<td>CAS:112-24-3</td>
<td>Skin Corr. 1B, H314; Skin Sens. 1,</td>
</tr>
</tbody>
</table>
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| 0.1-1 % | Ethylene diamine | CAS:107-15-3 | H317; Aquatic Chronic 3, H412; Acute Tox. 4, H312 |
| 0.1-1 % | Diethylene triamine | CAS:111-40-0 | Skin Corr. 1B, Skin Sens. 1, Acute Tox. 4, H302; Acute Tox. 4, H312 |

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures
In case of skin contact: Immediately take off all contaminated clothing. OBTAIN IMMEDIATE MEDICAL ATTENTION. Remove contaminated clothing immediately and dispose of safely. After contact with skin, wash immediately with soap and plenty of water. In case of eyes contact: After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. Protect uninjured eye.
In case of Ingestion: Give nothing to eat or drink.
In case of Inhalation: Remove casualty to fresh air and keep warm and at rest.

4.2. Most Important Symptoms and Effects, both Acute and Delayed
Eye irritation
Eye damages
Skin Irritation
Erythema

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed
In case of accident or un-wellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media
Suitable Extinguishing Media: Water. Carbon dioxide (CO2).
Unsuitable Extinguishing Media: None in particular.

5.2. Special Hazards Arising From the Chemical
Do not inhale explosion and combustion gases. Burning produces heavy smoke.
Hazardous combustion products: N.A.
Explosive properties: N.A.
Oxidizing properties: N.A.

5.3. Special Protective Equipment and Precautions for Fire-Fighters
Use suitable breathing apparatus. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Move undamaged containers from immediate hazard are if it can be done safely.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures
Wear personal protection equipment. Remove persons to safety. See protective measures under point 7 and 8.

6.2. Methods and Material for Containment and Cleaning Up
Suitable material for taking up: absorbing material, organic, sand. Wash with plenty of water.
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SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling
Avoid contact with skin and eyes, inhalation of vapors and mists. Exercise the greatest care when handling or opening the container. Don't use empty container before they have been cleaned. Before making transfer operations, assure that there aren't any incompatible material residuals in the containers. Contaminated clothing should be changed before entering eating areas. Do not eat or drink while working. See also section 8 for recommended protective equipment.

7.2. Conditions for Safe Storage, Including Any Incompatibilities
Storage temperature: N.A.
Incompatible materials: None in particular.
Instructions as regards storage premises: Adequately ventilated premises.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters
List of Components with OEL Value:

<table>
<thead>
<tr>
<th>Component</th>
<th>OEL Type</th>
<th>Country</th>
<th>Ceiling</th>
<th>Long Term mg/m3</th>
<th>Long Term ppm</th>
<th>Short Term mg/m3</th>
<th>Short Term PPM</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene diamine</td>
<td>OSHA</td>
<td></td>
<td></td>
<td>25</td>
<td>10</td>
<td></td>
<td></td>
<td>A4 - Not classifiable as a Human Carcinogen; Skin - potential significant contribution to overall exposure by the cutaneous route</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diethylene triamine</td>
<td>ACGIH</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Skin - potential significant contribution to overall exposure by the cutaneous route; eye and upper respiratory tract irritation</td>
</tr>
</tbody>
</table>

Appropriate Engineering Controls: N.A.

8.2. Individual Protection Measures

Eye protection: Use close fitting safety goggles, don't use eye lens.
Protection for skin: Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.
Protection for hands: Use protective gloves that provide comprehensive protection, e.g. P.V.C., neoprene or rubber.
Respiratory protection: Use adequate protective respiratory equipment.
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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance and color</td>
<td>Paste beige.</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic.</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>N.A.</td>
</tr>
<tr>
<td>pH</td>
<td>N.A.</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>N.A.</td>
</tr>
<tr>
<td>Melting Point</td>
<td>N.A.</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>N.A.</td>
</tr>
<tr>
<td>Initial Boiling Point/Boiling Range</td>
<td>N.A.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt; 212 °F (100 °C)</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>N.A.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>N.A.</td>
</tr>
<tr>
<td>Lower Flammable Limit</td>
<td>N.A.</td>
</tr>
<tr>
<td>Upper Flammable Limit</td>
<td>N.A.</td>
</tr>
<tr>
<td>Explosive Limits</td>
<td>N.A.</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>N.A.</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>N.A.</td>
</tr>
<tr>
<td>Relative Density</td>
<td>N.A.</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>N.A.</td>
</tr>
<tr>
<td>Solubility in Oil</td>
<td>N.A.</td>
</tr>
<tr>
<td>Partition Coefficient (N-Octanol/Water)</td>
<td>N.A.</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>N.A.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>N.A.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>N.A.</td>
</tr>
<tr>
<td>Explosive Limits</td>
<td>N.A.</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>N.A.</td>
</tr>
<tr>
<td>Solid/Gas Flammability</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

9.2. Other Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance Groups Relevant Properties</td>
<td>N.A.</td>
</tr>
<tr>
<td>Miscibility</td>
<td>N.A.</td>
</tr>
<tr>
<td>Fat Solubility</td>
<td>N.A.</td>
</tr>
<tr>
<td>Conductivity</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity: Stable under normal conditions.

10.2. Chemical Stability: Data not available.

10.3. Possibility of Hazardous Reactions: None.

10.4. Conditions to Avoid: Stable under normal conditions.

10.5. Incompatible Materials: None in particular.

10.6. Hazardous Decomposition Products: None.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture.

11.2. Information on Toxicological Effects - Ingredient(s)
### 11.3. If not differently specified, the information required in the regulation and listed below must be considered as N.A.

a) acute toxicity  
b) skin corrosion/irritation  
c) serious eye damage/irritation  
d) respiratory or skin sensitization  
e) germ cell mutagenicity  
f) carcinogenicity  
g) reproductive toxicity  
h) STOT-single exposure  
i) STOT-repeated exposure  
j) aspiration hazard

**Substance(s) listed on the IARC Monographs:** None  
**Substance(s) listed as OSHA Carcinogen(s):** None  
**Substance(s) listed as NIOSH Carcinogen(s):** None  
**Substance(s) listed on the NTP report on Carcinogens:** None

### SECTION 12: ECOLOGICAL INFORMATION

#### 12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment. Eco-Toxicological Information:

**List of components with eco-toxicological properties**

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Component</th>
<th>Identification number</th>
<th>Ecotox Infos</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-70 %</td>
<td>4-Nonylphenol, branched</td>
<td>CAS: 84852-15-3 -</td>
<td>LC50 Fish Pimephales promelas0,135mg/L 96h ,,Holcombe,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>67-548-EC: 601-053-00-8</td>
<td>(Series A) 35, 367-38</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LC100 Fish Leuciscus idus1,1mg/L 48h ,,Huels study, 1988 (unpublished)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LC50 Fish Leuciscus idus0,95mg/L 48h ,,Huels study, 1988 (unpublished)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LOEC Fish Pimephales promelas14μg/L 33d ,,Chemical Manufacturers Association (1991) Two environmental effects 4-Nonylphenol final reports 1. Chronic toxicity of Nonylphenol to the Mysid, Mysis bahia: EnviroSystems Study Number 8977-CMA 2. Early life stage toxicity of Nonylphenol to the fat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NOEC Fish Pimephales promelas7,4μg/L 33d ,,Chemical Manufacturers Association (1991) Two environmental effects 4-Nonylphenol final reports 1. Chronic toxicity of Nonylphenol to the Mysid, Mysis bahia: EnviroSystems Study Number 8977-CMA 2. Early life stage</td>
</tr>
</tbody>
</table>
### Toxicity of Nonylphenol to the Fat

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS</th>
<th>LC50/a) Aquatic acute toxicity Fish Pimephales promelas = 135mg/L 96h IUCLID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonylphenol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC100 Daphnia Daphnia magna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC100 Daphnia magna was experimentally determined using method designed by the manufacturer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC0 Daphnia Daphnia magna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC0 Daphnia magna was experimentally determined using method designed by the manufacturer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC50 Daphnia Daphnia magna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC50 Daphnia magna was experimentally determined using method designed by the manufacturer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOEC Daphnia Daphnia magna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOEC Daphnia magna was experimentally determined using method designed by the manufacturer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOEC Daphnia Daphnia magna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOEC Daphnia magna was experimentally determined using method designed by the manufacturer.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### LC50 for Aminoethylpiperazine

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS</th>
<th>LC50/a) Aquatic acute toxicity Fish Pimephales promelas = 135mg/L 96h IUCLID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aminoethylpiperazine</td>
<td>140-31-8</td>
<td></td>
</tr>
<tr>
<td>LC50/a) Aquatic acute toxicity Fish Pimephales promelas = 135mg/L 96h IUCLID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50/a) Aquatic acute toxicity Fish Lepomis macrochirus = 1351mg/L 96h EPA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC50/a) Aquatic acute toxicity Daphnia Daphnia magna = 14mg/L 48h IUCLID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC50/a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata = 36mg/L 96h EPA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC50/a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata = 16mg/L 72h EPA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC50/a) Aquatic acute toxicity Algae Desmodesmus subspicatus = 13mg/L 72h IUCLID</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### LC50 for Triethylene tetramine

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS</th>
<th>LC50/a) Aquatic acute toxicity Fish Pimephales promelas = 135mg/L 96h IUCLID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethylene tetramine</td>
<td>112-24-3</td>
<td></td>
</tr>
<tr>
<td>LC50/a) Aquatic acute toxicity Fish Pimephales promelas = 135mg/L 96h IUCLID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50/a) Aquatic acute toxicity Fish Poecilia reticulata = 1000mg/L 96h IUCLID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50/a) Aquatic acute toxicity Fish Oncorhynchus mykiss = 100mg/L 96h IUCLID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC50/a) Aquatic acute toxicity Daphnia Daphnia magna = 32mg/L 48h IUCLID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC50/a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata = 495mg/L 72h IUCLID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC50/a) Aquatic acute toxicity Algae Desmodesmus subspicatus = 2.50000mg/L 72h IUCLID</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Concentration</th>
<th>Substance</th>
<th>CAS Number</th>
<th>Acute Toxicity Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1-1 %</td>
<td>Ethylene diamine</td>
<td>CAS: 107-15-3</td>
<td>LC50 a) Aquatic acute toxicity Fish Pimephales promelas = 986mg/L 96h EPA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LC50 a) Aquatic acute toxicity Fish Poecilia reticulata = 180mg/L 96h EPA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EC50 a) Aquatic acute toxicity Daphnia Daphnia magna = 17mg/L 48h IUCLID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata = 643mg/L 72h IUCLID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata = 151mg/L 96h IUCLID</td>
</tr>
<tr>
<td>0.1-1 %</td>
<td>Diethylene triamine</td>
<td>CAS: 111-40-0</td>
<td>LC50 a) Aquatic acute toxicity Fish Poecilia reticulata = 248mg/L 96h IUCLID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LC50 a) Aquatic acute toxicity Daphnia Daphnia magna = 16mg/L 48h IUCLID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata = 1164mg/L 72h IUCLID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EC50 a) Aquatic acute toxicity Algae Pseudokirchneriella subcapitata = 345,60000mg/L 96h EPA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LC50 a) Aquatic acute toxicity Fish Leuciscus idus = 430,00000mg/L 96h EPA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EC50 a) Aquatic acute toxicity Daphnia Daphnia magna = 37,00000mg/L 24h</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EC50 a) Aquatic acute toxicity Daphnia Daphnia magna = 16,00000mg/L 48h</td>
</tr>
</tbody>
</table>

12.2. Persistence and Degradability  N.A.
12.3. Bioaccumulative Potential N.A.
12.4. Mobility in Soil N.A.
12.5. Other Adverse Effects N.A.

SECTION 13: DISPOSAL CONSIDERATIONS
13.1. Waste treatment methods
Waste must be handled in accordance with all federal, state, provincial, and local regulations. Consult authorities before disposal.

SECTION 14: TRANSPORT INFORMATION
14.1. UN number
ADR-UN number: 1760
DOT-UN Number: UN1760
IATA-Un number: 1760
IMDG-Un number: 1760

14.2. UN proper shipping name
ADR-Shipping Name: CORROSIVE LIQUID, N.O.S.
DOT- Proper Shipping Name: CORROSIVE LIQUIDS, N.O.S.
IATA-Technical name: CORROSIVE LIQUID, N.O.S.
IMDG-Technical name: CORROSIVE LIQUID, N.O.S.

14.3. Transport hazard class(es)
ADR-Class: 8
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DOT-Hazard Class: 8
IATA-Class: 8
IMDG-Class: 8

14.4. Packing group
ADR-Packing Group: III
DOT-Packing group: III
IATA-Packing group: III

IMDG-Packing group: III

14.5. Environmental hazards
Marine pollutant: Yes
Environmental Pollutant: N.A.

14.6. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
N.A.

14.7. Special precautions

Department of Transportation (DOT):
DOT-Special Provision(s): IB3, T7, TP1, TP28
DOT-Label(s): 8
DOT-Symbol: N/A
DOT-Cargo Aircraft: N/A
DOT-Passenger Aircraft: N/A
DOT-Bulk: N/A
DOT-Non-Bulk: N/A

Road and Rail (ADR-RID):
ADR-Label: 8
ADR-Hazard identification number: 80
ADR-Tunnel Restriction Code: 3 (E)

Air (IATA):
IATA-Passenger Aircraft: 852
IATA-Cargo Aircraft: 856
IATA-Label: 8
IATA-Sub risk: -
IATA-Erg: 8L
IATA-Special Provisions: A3 A803

Sea (IMDG):
IMDG-Stowage Code: Category A
IMDG-Stowage Note: Clear of living quarters.
IMDG-Sub risk: -
IMDG-Special Provisions: 223 274
IMDG-Page: N/A
IMDG-Label: N/A
IMDG-EMS: F-A, S-B
IMDG-MFAG: N/A

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

15.1.1. TSCA - Toxic Substances Control Act
TSCA inventory: All the components are listed on the TSCA inventory

TSCA listed substances:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Section 8b, Section 8a - PAIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Nonylphenol, branched</td>
<td>Section 8b</td>
</tr>
<tr>
<td>Aminoethylpiperazine</td>
<td></td>
</tr>
<tr>
<td>Fatty acids, C18-unsaturated, dimers, reaction products with Polyethylenepolyamines</td>
<td>Section 8b</td>
</tr>
<tr>
<td>2,4,6-Tri(dimethylaminomethyl)phenol</td>
<td>Section 8b</td>
</tr>
<tr>
<td>Triethylene tetramine</td>
<td>Section 8b</td>
</tr>
<tr>
<td>Ethylene diamine</td>
<td>Section 8b</td>
</tr>
<tr>
<td>Diethylene triamine</td>
<td>Section 8b</td>
</tr>
</tbody>
</table>

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15.1.2. SARA - Superfund Amendments and Reauthorization Act
Section 302 - Extremely Hazardous Substances: Ethylene diamine
Section 304 - Hazardous substances: Ethylene diamine
Section 313 - Toxic chemical list: no substances listed

15.1.3. CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
Substance(s) listed under CERCLA:
Ethylene diamine Reportable quantity: 5000 pounds
Ethylene diamine Reportable quantity for mixture: 2493765.586 pounds

15.1.4. CAA - Clean Air Act
CAA listed substances: Ethylene diamine is listed in CAA Section 112(b) - HON

15.1.5. CWA - Clean Water Act
CWA listed substances: Ethylene diamine is listed in CWA Section 311

15.2. US State Regulations
15.2.1. California Proposition 65
Substance(s) listed under California Proposition 65: Diethylene triamine; Listed as carcinogen

15.2.2. Massachusetts Right to know
Substance(s) listed under Massachusetts Right to know: Aminoethylpiperazine, Triethylene tetramine, Ethylene diamine, Diethylene triamine

15.2.3. Pennsylvania Right to know
Substance(s) listed under Pennsylvania Right to know: Aminoethylpiperazine, Triethylene tetramine, Ethylene diamine, Diethylene triamine

15.2.4. New Jersey Right to know
Substance(s) listed under New Jersey Right to know: Aminoethylpiperazine, Triethylene tetramine, Ethylene diamine, Diethylene triamine

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date: 05/13/2015
Product Code: 2112
Other Information: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H226</td>
<td>Flammable liquid and vapor.</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H311</td>
<td>Toxic in contact with skin.</td>
</tr>
<tr>
<td>H312</td>
<td>Harmful in contact with skin.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>H334</td>
<td>May cause allergy or asthma symptoms or breathing difficulties if inhaled.</td>
</tr>
<tr>
<td>H361</td>
<td>Suspected of damaging fertility or the unborn child &lt;state specific effect if known&gt; &lt;state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard&gt;.</td>
</tr>
<tr>
<td>H361.A</td>
<td>Suspected of damaging fertility or the unborn child if inhaled.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>H412</td>
<td>Harmful to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>
Additional classification information:

HMIS Health: 3 = Serious
HMIS Health - Is health hazard chronic?: No
HMIS Flammability: 1 = Combustible if heated
HMIS Reactivity: 0 = Minimal
HMIS P.P.E.: Splash goggles, gloves, chemical apron, vapor respirator
NFPA Health: 3 = Serious
NFPA Flammability: 1 = Combustible if heated
NFPA Reactivity: 0 = Minimal
NFPA Special Risk: NONE

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. The information herein is presented in good faith and believed to be accurate as of the effective date given. It is the buyer's responsibility to ensure that its activities comply with Federal, State/provincial, and local laws.

This document was prepared by a competent person who has received appropriate training. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended. This SDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO: International Civil Aviation Organization.
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
CLP: Classification, Labeling, Packaging.
EINECS: European Inventory of Existing Commercial Chemical Substances.
INCI: International Nomenclature of Cosmetic Ingredients.
CAS: Chemical Abstracts Service (division of the American Chemical Society).
GefStoffVO: Ordinance on Hazardous Substances, Germany.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
DNEL: Derived No Effect Level.
PNEC: Predicted No Effect Concentration.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
WGK: German Water Hazard Class.
KSt: Explosion coefficient.

Party Responsible for the Preparation of This Document
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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.