1. Identification

Product identifier  AMMONYX LO
Other means of identification
  Product code  1928
Recommended use  Surfactant
Recommended restrictions  For industrial use only.
Manufacturer/Importer/Supplier/Distributor information
  Manufacturer  Stepan Company
  Address  22 West Frontage Road
            Northfield, IL 60093
            USA
  Telephone  General  1-847-446-7500
            Emergency phone number  Medical  1-800-228-5635
            Chemtrec  1-800-424-9300
            Chemtrec Int'l  +1 703-527-3887

2. Hazard(s) identification

Physical hazards  Not classified.
Health hazards
  Acute toxicity, oral  Category 4
  Skin corrosion/irritation  Category 2
  Serious eye damage/eye irritation  Category 1
Environmental hazards
  Hazardous to the aquatic environment, acute hazard  Category 1
  Hazardous to the aquatic environment, long-term hazard  Category 2
OSHA defined hazards  Not classified.

Signal word  Danger
Hazard statement  Harmful if swallowed. Causes skin irritation. Causes serious eye damage. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Prevention  Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves. Wear eye/face protection.
Response  Collect spillage. If swallowed: Call a poison center/doctor if you feel unwell. If on skin: Wash with plenty of water. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Specific treatment (see this label). Rinse mouth. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
Storage  Store away from incompatible materials.
Disposal  Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)  None known.
Supplemental information  Not applicable.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td></td>
<td>7732-18-5</td>
<td>67 - 70</td>
</tr>
</tbody>
</table>
4. First-aid measures

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

Skin contact
Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash 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. Get medical attention immediately.

Ingestion
Rinse mouth. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Do not induce vomiting.

Most important symptoms/effects, acute and delayed
Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information
In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

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
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
Move containers from fire area if you can do so without risk.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. 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
Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

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

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling
Do not get this material in contact with eyes. Do not taste or swallow. Avoid contact with skin. Avoid prolonged exposure. Avoid contact with clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities
Store in original tightly closed container. 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 (typically 10 air changes per hour) 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**

**Eye/face protection**
Wear safety glasses with side shields (or goggles) and a face shield.

**Hand protection**
Wear appropriate chemical resistant gloves.

**Skin protection**
Wear appropriate chemical resistant clothing.

**Respiratory protection**
In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards**
Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**
When using, do not eat, drink or 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**: Light yellow.
- **Odor**: Not available.
- **Odor threshold**: Not available.
- **pH**: 7.0000 - 8.5000 (10% in H2O)
- **Melting point/freezing point**: Not available.
- **Initial boiling point and boiling range**: 212 °F (100 °C)
- **Flash point**: > 201 °F (> 93.9 °C) PMCC
- **Evaporation rate**: Estimated slower than ethyl ether.
- **Flammability (solid, gas)**: Not available.

**Upper/lower flammability or explosive limits**
- **Flammability limit - lower (%)**: Not available.
- **Flammability limit - upper (%)**: NOT DETERMINED.
- **Explosive limit - lower (%)**: Not available.
- **Explosive limit - upper (%)**: Not available.

**Vapor pressure**: Not available.
**Vapor density**: Estimated lighter than air.
**Relative density**: Not available.

**Solubility(ies)**
- **Solubility (water)**: Not available.

**Auto-ignition temperature**: Not available.
**Decomposition temperature**: Not available.

**Viscosity**: 18 cps (@ 25 C)

**Other information**
- **Density**: 8.05 lbs/gal @ 25C
- **Percent volatile**: 68 - 71 %
- **Pour point**: 10 °F (-12.2 °C)

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
No dangerous reaction known under conditions of normal use.

Conditions to avoid
Avoid temperatures exceeding the flash point. Contact with incompatible materials.

Incompatible materials
Strong oxidizing agents. Nitrous acid and other nitrosating agents

Hazardous decomposition products
Upon decomposition, this product may yield oxides of nitrogen and ammonia, carbon dioxide, carbon monoxide and other low molecular weight hydrocarbons.

11. Toxicological information

Information on likely routes of exposure
- **Ingestion**: Harmful if swallowed.
- **Inhalation**: Prolonged inhalation may be harmful.
- **Skin contact**: Causes skin irritation.
- **Eye contact**: Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics
Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.

Information on toxicological effects

**Acute toxicity**
Harmful if swallowed.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMMONYX LO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 1065 mg/kg</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**
Causes skin irritation.

**Serious eye damage/eye irritation**
Causes serious eye damage.

**Respiratory or skin sensitization**
- **Respiratory sensitization**: Not available.
- **Skin sensitization**: This product is not expected to cause skin sensitization. Causes skin irritation.

**Germ cell mutagenicity**
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity**
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Not listed.

**Reproductive toxicity**
This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure**
Not applicable.

**Specific target organ toxicity - repeated exposure**
Not applicable.

**Aspiration hazard**
Not applicable.

**Chronic effects**
Prolonged inhalation may be harmful.

12. Ecological information

**Ecotoxicity**
Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMMONYX LO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algae</td>
<td>EC50</td>
<td>Algae, 0.19 mg/l, 72 hours</td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia, 3.1 mg/l, 48 hours</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Fish, 2.67 mg/l, 96 hours</td>
</tr>
</tbody>
</table>

**Persistence and degradability**
Expected to be readily biodegradable.

**Bioaccumulative potential**
No data available.

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

Hazardous waste code
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
Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT
Not regulated as dangerous goods.

IATA

UN number: UN3082
UN proper shipping name: Environmentally Hazardous Substance, Liquid, N.O.S., (Amine Oxide)
Transport hazard class(es):
- Class: 9
- Subsidiary risk: -
- Packing group: III
Environmental hazards: Yes
Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number: UN3082
UN proper shipping name: Environmentally Hazardous Substance, Liquid, N.O.S., (Amine Oxide)
Transport hazard class(es):
- Class: 9
- Subsidiary risk: -
- Packing group: III
Environmental hazards: Yes
Marine pollutant: No
EmS: Not available.
Special precautions for user: Read safety instructions, SDS and emergency procedures before handling. Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
IATA; IMDG

Material name: AMMONYX LO
Material ID: 1274    Product code: 1928    Version #: 03    Revision date: 03-24-2015    Print date: 03-24-2015
15. Regulatory information

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

**CERCLA Hazardous Substance List (40 CFR 302.4)**
Not listed.

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**
- **Hazard categories**
  - Immediate Hazard - Yes
  - Delayed Hazard - No
  - Fire Hazard - No
  - Pressure Hazard - No
  - Reactivity Hazard - No
- **SARA 302 Extremely hazardous substance**
  - No
- **SARA 311/312 Hazardous chemical**
  - Yes
- **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.

**US state regulations**
- **US. Massachusetts RTK - Substance List**
  - Not regulated.
- **US. Rhode Island RTK**
  - Not regulated.
- **US. 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.

**International Inventories**

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*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**
  - 03-24-2015
- **Revision date**
  - 03-24-2015
- **Version #**
  - 03
NFPA ratings

Disclaimer
Terms and Conditions. This SDS is designed only as guidance for the products to which it applies. To the greatest extent permitted by applicable law, nothing contained herein creates any legal obligation including contractual obligations, expressed or implied warranties, including any warranties of merchantability or fitness for particular purpose; or confers any intellectual property rights, including rights to use trademarks or a license to use patents, issued or pending. The information contained herein is based on the manufacturer's own study and the work of others, and is subject to change at any time without further notice. There is no warranty, expressed or implied, as to the accuracy, completeness or adequacy of the information contained herein, and neither the provider nor the manufacturer (nor the agents, directors, officers, contractors or employees of either) are liable to any party for any damages of any nature, including direct, special or consequential damages arising out of or in connection with the accuracy, completeness, adequacy or furnishing of any information in this SDS, or in any other way related (directly or indirectly) to this SDS. The receipt and use of this information constitutes consent to these terms and conditions.

Revision Information
Composition / Information on Ingredients: Disclosure Overrides