1. Identification

Product identifier: AMMONYX DO
Other means of identification:
- Product code: 1945
- Recommended use: Surfactant
- Recommended restrictions: For industrial use only.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer:
- Company name: Stepan Company
- Address: 22 West Frontage Road, Northfield, IL 60093, USA
- Telephone: General 1-847-446-7500
- E-mail: Not available.
- 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 2A

Environmental hazards:
- Hazardous to the aquatic environment, acute hazard: Category 1
- Hazardous to the aquatic environment, long-term hazard: Category 1

OSHA defined hazards: Not classified.

Label elements

Signal word: Warning

Hazard statement:
Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement

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:
If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. 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. Specific treatment (see this label). If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Collect spillage.

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

<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>60 - &lt; 70</td>
</tr>
<tr>
<td>Decyldimethylamine oxide</td>
<td></td>
<td>2605-79-0</td>
<td>30</td>
</tr>
<tr>
<td>Decyl dimethyl amine</td>
<td></td>
<td>1120-24-7</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Hydrogen peroxide</td>
<td></td>
<td>7722-84-1</td>
<td>&lt; 0.2</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.

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

**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.

**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**
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.

8. Exposure controls/personal protection

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.

Skin protection
Wear appropriate chemical resistant gloves.

Hand protection
Wear appropriate chemical resistant clothing.

Other
In case of insufficient ventilation, wear suitable respiratory equipment.

Respiratory protection

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
Not available.

Odor
Not available.

Odor threshold
Not available.

pH
8 (10% aqueous)

Melting point/freezing point
Not available.

Initial boiling point and boiling range
212 °F (100 °C)

Flash point
> 201.0 °F (> 93.9 °C) Pensky-Martens Closed Cup

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 available.

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: 13 cP @ 25°C

Other information:
- Pour point: -4 °F (-20 °C)
- 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: 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:
- Inhalation: Prolonged inhalation may be harmful.
- Skin contact: Causes skin irritation.
- Eye contact: Causes serious eye irritation.
- Ingestion: Harmful if swallowed.

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 DO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>Rabbit</td>
<td>&gt; 2000 mg/kg</td>
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<tr>
<td>Oral LD50</td>
<td>Rat</td>
<td>&gt; 600 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/eye irritation: Causes serious eye irritation.

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:
- US. National Toxicology Program (NTP) Report on Carcinogens: Not listed.

Reproductive toxicity: This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure: Not applicable.
12. Ecological information

Ecotoxicity

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMMONYX DO</td>
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</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
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<tr>
<td>Algae</td>
<td>EC50</td>
<td>0.01 mg/l, 72 hours</td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>1 mg/l, 48 hours</td>
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<tr>
<td>Fish</td>
<td>LC50</td>
<td>2.6 mg/l, 96 hours</td>
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</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

<table>
<thead>
<tr>
<th>UN number</th>
<th>ENvironmentally Hazardous Substance, Liquid, N.O.S. (Amine Oxide)</th>
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<td>UN number</td>
<td>3082</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Environmentally Hazardous Substance, Liquid, N.O.S. (Amine Oxide)</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
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<tr>
<td>Class</td>
<td>9</td>
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<tr>
<td>Subsidiary risk</td>
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<tr>
<td>Packing group</td>
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<tr>
<td>Environmental hazards</td>
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<td>Special precautions for user</td>
<td>Not available.</td>
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IMDG

<table>
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<tr>
<th>UN number</th>
<th>Environmentally Hazardous Substance, Liquid, N.O.S., (Amine Oxide), MARINE POLLUTANT</th>
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<td>UN number</td>
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<tr>
<td>Class</td>
<td>9</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Yes</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Not available.</td>
</tr>
<tr>
<td>EmS</td>
<td>Not available.</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

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

Not available.
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.

  - Not regulated.

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

- **SARA 302 Extremely hazardous substance**
  - Not listed.

- **SARA 311/312 Hazardous chemical**
  - Yes

  - Classified hazard categories:
    - 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.

**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>Country(s) or region</td>
<td>Inventory name</td>
<td>On inventory (yes/no)*</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</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 (NZIoC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Inventory (TCSI)</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 09-29-2014
Revision date 05-09-2019
Version # 05

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Revision information
Identification: Recommended restrictions
Hazard(s) identification: Supplemental information
Composition / Information on Ingredients: Ingredients
Physical & Chemical Properties: Multiple Properties
Transport Information: Material Transportation Information
HazReg Data: International Inventories
GHS: Classification