
Section 1. Identification

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| Product Identifier | Ammonyx® LO |
| Other Means of Identification | Amine oxide; 1-Dodecanamine, N,N-dimethyl-, N-oxide; IUPAC: Dodecyldimethylamine oxide; Code: AMMONYXLO23; CAS: 1643-20-5 |
| Product Use and Restrictions on Use | Surfactant for commercial or industrial use. |
| Initial Supplier Identifier | ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7 Phone: 800.387.7503 Fax: 888.281.8109 www.cleartech.ca |
| 24-Hour Emergency Phone | 306.664.2522 |

Section 02 Hazard Identification

Physical Hazards

This product does not qualify for any physical hazard class under WHMIS 2015

Health Hazards

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| Skin corrosion / irritation | Category 2 |
| Serious eye damage / eye irritation | Category 1 |

Signal Word

Danger

Hazard Statements

- H315 Causes skin irritation.
- H318 Causes serious eye damage.

Pictograms



Precautionary Statements

Prevention

- P264 Wash affected body parts thoroughly after handling.
- P280 Wear protective gloves, eye protection, face protection.

Response

P303 P352 P332 IF ON SKIN (or hair): Wash with plenty of water. If skin irritation occurs: Get medical advice /
P313 P362 P364 attention. Take off contaminated clothing and wash it before reuse.

P305 P351 P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present
P310 and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Hazards Not Otherwise Classified

Not available

Supplemental Information

Not available

Section 3. Composition / Information on Ingredients

Hazardous Ingredients:

| <i>Chemical name</i> | <i>Common name(s)</i> | <i>CAS number</i> | <i>Concentration (w/w%)</i> |
|---|--|-------------------|-----------------------------|
| 1-Dodecanamine, N,N-dimethyl-, N-oxide | Dodecyldimethylamine oxide | 1643-20-5 | 20-24% |
| 1-Tetradecanamine, N,N-dimethyl-, N-oxide | Dimethyl (tetradecyl)amine oxide | 3332-27-2 | 5-9% |

Section 4. First-Aid Measures

Description of necessary first-aid measures

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| Inhalation | Get medical advice / attention if you feel unwell or are concerned. Remove source of exposure or move person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. |
| Ingestion | Rinse mouth. Get medical advice / attention if you feel unwell or are concerned. |
| Skin contact | Avoid direct contact. Wear chemical protective clothing, if necessary. Take off immediately contaminated clothing, shoes and leather goods. Rinse skin with lukewarm, gently flowing water / shower for 15 to 20 minutes. Get medical advice / attention. Wash contaminated clothing before re-use, or discard. |
| Eye contact | Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 30 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a POISON CENTER or doctor. |

Most important symptoms and effects, both acute and delayed

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| Inhalation | May cause respiratory irritation. |
| Ingestion | May cause discomfort or nausea. |
| Skin contact | Causes skin irritation. |
| Eye contact | Causes serious eye damage. |
| Further information | For further information see Section 11 Toxicological Information. |

Section 5. Fire Fighting Measures

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| Suitable extinguishing media | Extinguish fire using extinguishing agents suitable for the surrounding fire. |
| Unsuitable extinguishing media | Water jets are not recommended in fires involving chemicals. |
| Specific hazards arising from the chemical | In the event of a fire oxides of carbon and nitrogen, and ammonia may be released. |
| Special protective equipment for fire-fighters | Wear NIOSH-approved self-contained breathing apparatus and chemical-protective clothing. |

Section 6. Accidental Release Measures

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| Personal Precautions / Protective Equipment / Emergency Procedures | Wear appropriate personal protective equipment (See Section 08 Exposure Controls and Personal Protection). Stay upwind, ventilate area. |
| Environmental Precautions | Prevent material from entering waterways, sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes. |
| Methods and Materials for Containment and Cleaning Up | SMALL SPILLS: Stop or reduce leak if safe to do so. Clean up spill with non-reactive absorbent and place in suitable, covered, labeled containers. Flush area with water. Contaminated absorbent material may pose the same hazards as the spilled product. LARGE SPILLS: Contact fire and emergency services and supplier for advice. |

Section 7. Handling and Storage

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| Precautions for Safe Handling | Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Inspect containers for damage or leaks before handling. If the original label is damaged or missing replace with a workplace label. Have suitable emergency equipment for fires, spills and leaks readily available. |
| Conditions for Safe Storage | Store in a cool, dry, well-ventilated area, away from heat sources and incompatible materials. Always store in original labeled container. Keep containers tightly closed when not in use and when empty. Empty containers may contain hazardous residues. Protect label and keep it visible. |
| Incompatibilities | Oxidizing agents, such sulphuric and nitric acids, and permanganates. |

Section 8. Exposure Controls and Personal Protection

Exposure limits

There are no known exposure limits for this product.

Engineering controls

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| Ventilation Requirements | Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems. |
| Other | A soak hose and eyewash station or emergency shower and eyewash station should be available, tested, and be in close proximity to the product being handled in accordance with provincial regulations. |

Protective equipment

The following are recommendations only. It is the responsibility of the employer / user to conduct a hazard assessment of the process in which this product being used and determine the proper engineering controls and PPE for their process. Additional regulatory and safety information should be sought from local authorities and, if needed, a professional industrial hygienist.

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| Eye and face protection | Where there is potential eye or face exposure, tightly fitting safety goggles and a face shield or a full face respirator or similar protective equipment which protects the wearer's face and eyes are recommended. Contact lenses are not recommended; they may contribute to severe eye injury. |
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| Hand and body protection | Disposable latex or nitrile gloves are recommended to prevent incidental contact. Butyl rubber, neoprene, or PVC skin protection is recommended for extended contact. Leather gloves are not recommended for chemical protection. Refer to manufacturer's specifications for breakthrough times and permeability information; note that breakthrough times and permeability vary with temperature, application and age of material. Continued use of contaminated safety gear or clothing is not recommended; wash before reuse or discard. |
| Respiratory protection | In case of insufficient ventilation wear suitable respiratory equipment. |

Section 9. Physical and Chemical Properties

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| Physical state | Liquid |
| Colour | Light yellow |
| Odour | Not available |
| Odour threshold | Not available |
| pH | 7.0-8.5 @ 100 g/L @ 25 °C |
| Melting point / freezing point | Pour point: -12 °C |
| Initial boiling point and boiling range | 100 °C |
| Flash point | >93.9 °C |
| Evaporation rate | Not available |
| Flammability | Not applicable |
| Upper flammable limit | Not available |
| Lower flammable limit | Not available |
| Vapour pressure | Not available |
| Vapour density | Not available |
| Relative density | Not applicable |
| Solubility | Not available |
| Partition coefficient: n-octanol/water | Not available |
| Auto-ignition temperature | Not available |
| Decomposition temperature | Not available |
| Viscosity | 18 mPa.s @ 25 °C |
| Specific gravity | 0.96 |
| Particle characteristics | Not applicable |

Section 10. Stability and Reactivity

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| Reactivity | Not reactive under recommended storage conditions. |
| Stability | This product is stable if stored according to the recommendations in Section 07. |
| Possibility of hazardous reactions | Hazardous polymerization is not known to occur. |
| Conditions to avoid | Avoid contact with incompatible materials. |
| Incompatible materials | Oxidizing agents, such sulphuric and nitric acids, and permanganates. |
| Hazardous decomposition products | Thermal decomposition may produce oxides of carbon and nitrogen, and ammonia. |

Section 11. Toxicological Information

Acute Toxicity (LD50 / LC50 values)

Safety Data Sheet

Ammonyx® LO
ClearTech Industries Inc

| <i>Component</i> | <i>Route</i> | <i>Species</i> | <i>Value</i> | <i>Exposure time</i> |
|------------------|--------------|----------------|----------------|----------------------|
| Ammonyx LO | Oral | Rat | >3500 mg/kg bw | |
| Ammonyx LO | Dermal | Rabbit | >2000 mg/kg bw | |

Toxic Health Effect Summary

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| Chemical characteristics | No known effects |
| Skin | Causes skin irritation. |
| Ingestion | May cause discomfort or nausea. |
| Inhalation | May cause respiratory irritation. |
| Eye contact | Causes serious eye damage. |
| Sensitization | This product and its components at their listed concentration have no known sensitizing effects. |
| Mutagenicity | This product and its components at their listed concentration have no known mutagenic effects. |
| Carcinogenicity | This product and its components at their listed concentration have no known carcinogenic effects. |
| Reproductive toxicity | This product and its components at their listed concentration have no known reproductive effects. |
| Specific organ toxicity | This product and its components at their listed concentration have no known effects on specific organs. |
| Aspiration hazard | Not available |
| Synergistic materials | Not available |

Section 12. Ecological Information

Ecotoxicity

| <i>Component</i> | <i>Type</i> | <i>Species</i> | <i>Value</i> | <i>Exposure Time</i> |
|-----------------------|---|-----------------------|--------------|----------------------|
| Ammonyx LO | LC50 | Fish | 2.67 mg/L | 96 hours |
| Ammonyx LO | EC50 | Aquatic invertebrates | 3.1 mg/L | 48 hours |
| Ammonyx LO | EC50 | Algae | 0.19 mg/L | 72 hours |
| Biodegradability | The domestic substance list categorizes all of the components of this product as non-persistent. | | | |
| Bioaccumulation | The domestic substance list categorizes all of the components of this product as non-bioaccumulative. | | | |
| Mobility | This product is water soluble, is not predicted to adsorb to soil and may contaminate ground water. | | | |
| Other adverse effects | The domestic substance list categorizes Dimethyl(tetradecyl)amine oxide as inherently toxic to aquatic organisms. Not available | | | |

Section 13. Disposal Considerations

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| Waste From Residues / Unused Products | Dispose in accordance with all federal, provincial, and local regulations including the Canadian Environmental Protection Act. |
| Contaminated Packaging | Do not remove label, follow label warnings even after the container is empty. Empty containers should be recycled or disposed of at an approved waste handling facility. |

Section 14. Transport Information

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| UN number | UN3082 |
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Safety Data Sheet

Ammonyx® LO
ClearTech Industries Inc

UN proper shipping name and description ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Lauramine Oxide)

Transport hazard class(es) 9

Packing group III

Excepted quantities 5 L

Environmental hazards Listed as a marine pollutant under Canadian TDG Regulations, schedule III.

Special precautions

Transport in bulk ERAP index: not available

MARPOL 73/78 and IBC Code:

Product name: Alkyl (C12+) dimethylamine

Pollution category: X

Hazards: the product is included in the Code because of both its safety and pollution hazards.

Ship type: ship type 1

Tank type: integral gravity tank

Tank vents: controlled venting

Tank

environmental control: no special requirements under this Code

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| Electrical equipment: | Temperature classes | no requirements |
| | Apparatus group | no requirements |
| | Flash point | flashpoint exceeding 60 °C |

Gauging: closed gauging

Vapour detection: toxic vapours

regular foam; encompasses all foams that are not of an alcohol-resistant type, including fluoro-protein and aqueous-film-forming foam

Fire protection: (AFFF)
water-spray
dry chemical

Emergency equipment see 14.3.1

Specific and operational requirements 15.12, 15.17, 15.19

Additional information

Secure containers (full or empty) during shipment and ensure all caps, valves, or closures are secured in the closed position.

Special Provisions:

16 (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) of Part 3 (Documentation). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks).

99 (1) Mixtures of solids that are not dangerous goods and liquids or solids that are UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., or UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., may be handled, offered for transport or transported as UN3077 if there is no visible liquid when the dangerous goods are loaded into a means containment and during transport.

99 (2) These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., or less than 450 L of UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., on a road vehicle or a railway vehicle. The dangerous goods must be contained in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety.

Section 15. Regulatory Information.

All components of this product appear on the domestic substance list.

Section 16. Other Information

Date of latest revision: September 08, 2025

Note: The responsibility to provide a safe workplace remains with the buyer / user. The buyer / user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the buyer / user to comply with all applicable laws and regulations regarding handling, using, reselling and shipping this product.

Attention: Receiver of the chemical goods / SDS coordinator

As part of our commitment to the RDC Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

References:

- 1) *NIOSH Pocket Guide to Chemical Hazards*; U.S. Department of Health and Human Services, <https://www.cdc.gov/niosh/npg/default.html>
- 2) *WorkSafe BC E-Limit*; Workers' Compensation Board of British Columbia, <https://elimit.online.worksafebc.com/>
- 3) *ECHA - Registered Substance Dossier*; European Chemicals Agency, <https://echa.europa.eu/es/registration-dossier/-/registered-dossier/10062>
- 4) *Transportation of Dangerous Goods Regulations*; Transport Canada, <https://laws-lois.justice.gc.ca/eng/regulations/SOR-2001-286/index.html>
- 5) Globally Harmonized System of Classification and Labeling of Chemicals (GHS) *Seventh revised edition*

- 6) International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) 2007 Edition
- 7) The ACS Style Guide