1. Product and Company Identification

Product identifier: Eco-Lyme Descaler (4167-01, 4167-05, 4167-08)
Other means of identification: Not available
Recommended use: Descaler
Recommended restrictions: None known.
Manufacturer information: Nu-Calgon
2611 Schuetz Road
St. Louis, MO 63043 US
Phone: 314-469-7000 / 800-554-5499
Emergency Phone: 1-800-424-9300 (CHEMTREC)
Supplier: See above.

2. Hazards Identification

Physical hazards: Corrosive to metals, Category 1
Health hazards:
- Acute toxicity, dermal, Category 4
- Skin corrosion/irritation, Category 1B
- Serious eye damage/eye irritation, Category 1
- Specific target organ toxicity, single exposure, Category 3 respiratory tract irritation

Environmental hazards: Not classified.

WHMIS 2015 defined hazards: Not classified

Label elements:

Signal word: Danger
Hazard statement: May be corrosive to metals. Harmful in contact with skin. Causes severe skin burns and eye damage. May cause respiratory irritation.

Precautionary statement:
Prevention: Keep only in original packaging. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe mist or vapor. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling.
Response: Absorb spillage to prevent material-damage. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. Specific treatment (see information on this label). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage: Store in a corrosion resistant container with a resistant inner liner. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS 2015: Health Hazard(s) not otherwise classified (HNNOC): None known
WHMIS 2015: Physical Hazard(s) not otherwise classified (PHNOC): None known
Hazard(s) not otherwise classified (HNOC): None known.
Supplemental information: None.

3. Composition/Information on Ingredients

Mixture
4. First Aid Measures

Inhalation
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

Skin contact
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER/doctor. Wash contaminated clothing before reuse. Specific treatment (see information on this label).

Eye contact
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.

Ingestion
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

Most important symptoms/effects, acute and delayed
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. Symptoms may be delayed.

General information
Take off immediately all contaminated clothing. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

5. Fire Fighting Measures

Suitable extinguishing media

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.

Hazardous combustion products
May include and are not limited to: Oxides of sulfur. Oxides of nitrogen. Oxides of carbon.

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 breathe mist or vapor. 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
Should not be released into the environment. Prevent entry into waterways, sewer, basements or confined areas.

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 spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later collection. 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. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. Do not discharge into lakes, streams, ponds or public waters.
7. Handling and Storage

Precautions for safe handling
Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash thoroughly after handling. Wash contaminated clothing before reuse. Use good industrial hygiene practices in handling this material.

Conditions for safe storage, including any incompatibilities
Store locked up. Store in a cool, dry place out of direct sunlight. Store in a corrosion resistant container with a resistant inner liner. Store away from incompatible materials (see Section 10 of the SDS). Keep out of reach of children.

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.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin protection
Hand protection
Impervious gloves. Confirm with reputable supplier first.

Other
Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. As required by employer code.

Respiratory protection
Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2).

Thermal hazards
Not applicable.

General hygiene considerations
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. When using do not eat or drink.

9. Physical and Chemical Properties

Appearance
Clear

Physical state
Liquid.

Form
Liquid.

Color
Colorless to Yellow

Odor
Slight Sulfurous

Odor threshold
Not available.

pH
< 1

Melting point/freezing point
-76 °F (-60 °C)

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

Pour point
Not available.

Specific gravity
1.065

Partition coefficient (n-octanol/water)
-4.98

Flash point
Not available.

Evaporation rate
Not available.

Flammability (solid, gas)
Not applicable.

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
3.3
10. Stability and Reactivity

Reactivity
Reacts violently with strong alkaline substances. This product may react with reducing agents. May be corrosive to metals. This product may react with strong oxidizing agents.

Possibility of hazardous reactions
No dangerous reaction known under conditions of normal use.

Chemical stability
Material is stable under normal conditions.

Conditions to avoid
Do not mix with other chemicals.

Incompatible materials

11. Toxicological Information

Routes of exposure
Eye, Skin contact, Inhalation, Ingestion.

Information on likely routes of exposure

Ingestion
Causes digestive tract burns. May cause stomach distress, nausea or vomiting.

Inhalation
May cause irritation to the respiratory system.

Skin contact
Harmful in contact with skin. Causes severe skin burns.

Eye contact
Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity
In high concentrations, vapors are anesthetic and may cause headache, fatigue, dizziness and central nervous system effects. May cause respiratory irritation. Harmful in contact with skin.

Components

<table>
<thead>
<tr>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkane sulfonic acid (CAS 75-75-2)</td>
<td></td>
</tr>
<tr>
<td>Acute Dermal LD50</td>
<td>Rabbit 200 - 2000 mg/kg, 24 Hours, ECHA</td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>Not available</td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Rat 1158 mg/kg, ECHA</td>
</tr>
<tr>
<td></td>
<td>648.7 mg/kg, ECHA</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Causes severe skin burns and eye damage.

Exposure minutes
Not available.

Erythema value
Not available.

Oedema value
Not available.

Serious eye damage/eye irritation
Causes serious eye damage.

Conjunctival opacity value
Not available.

Iris lesion value
Not available.

Conjunctival reddening value
Not available.

Conjunctival oedema value
Not available.

Recover days
Not available.
Respiratory or skin sensitization

Respiratory sensitization
Not a respiratory sensitizer.

Skin sensitization
This product is not expected to cause skin sensitization.

Mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
See below.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

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

Teratogenicity
Not available.

Specific target organ toxicity - single exposure
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
Not an aspiration hazard.

12. Ecological Information

Ecotoxicity
Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems. See below

Ecotoxicological data

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkane sulfonic acid (CAS 75-75-2)</td>
<td>Daphnia</td>
<td>12 mg/L, 48 Hours</td>
</tr>
</tbody>
</table>

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Mobility in general
Not 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
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations
Dispose in accordance with all applicable regulations.

Hazardous waste code
D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]
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
Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

Transport of Dangerous Goods (TDG) Proof of Classification
Classification Method: Classified as per Part 2, Sections 2.1 – 2.8 of the Transportation of Dangerous Goods Regulations. If applicable, the technical name and the classification of the product will appear below.

U.S. Department of Transportation (DOT)

Basic shipping requirements:
- **UN number**: UN3265
- **Proper shipping name**: Corrosive liquid, acidic, organic, n.o.s.
- **Technical name**: Alkane sulfonic acid
- **Hazard class**: 8
- **Packing group**: II
- **Special provisions**: 148, B2, IB2, T11, TP2, TP27
- **Packaging exceptions**: 154
- **Packaging non bulk**: 202
- **Packaging bulk**: 242
Transportation of Dangerous Goods (TDG - Canada)

Basic shipping requirements:

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN3265</th>
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</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.</td>
</tr>
<tr>
<td>Technical name</td>
<td>Alkane sulfonic acid</td>
</tr>
<tr>
<td>Hazard class</td>
<td>8</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>Special provisions</td>
<td>16</td>
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</table>

IATA/ICAO (Air)

Basic shipping requirements:

<table>
<thead>
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<th>UN number</th>
<th>UN3265</th>
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</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>Corrosive liquid, acidic, organic, n.o.s.</td>
</tr>
<tr>
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<td>Alkane sulfonic acid</td>
</tr>
<tr>
<td>Hazard class</td>
<td>8</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
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</tbody>
</table>

IMDG (Marine Transport)

Basic shipping requirements:

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN3265</th>
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</thead>
<tbody>
<tr>
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<td>CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.</td>
</tr>
<tr>
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<td>Hazard class</td>
<td>8</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
</tbody>
</table>

DOT

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

WHMIS 2015 Exemptions

Not applicable

US federal regulations

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

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

15. Regulatory Information

This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.
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
- No

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.

US state regulations
- See below
- US - New Jersey RTK - Substances: Listed substance
  - Alkane sulfonic acid (CAS 75-75-2)
- US - Texas Effects Screening Levels: Listed substance
  - Alkane sulfonic acid (CAS 75-75-2)
- US. Massachusetts RTK - Substance List
  - Not regulated.
- US. New Jersey Worker and Community Right-to-Know Act
  - Not regulated.
- US. Pennsylvania Worker and Community Right-to-Know Law
  - Not listed.
- US. Rhode Island RTK
  - Not regulated.
- US. California Proposition 65
  - Not Listed.

Inventory status

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<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>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)

16. Other Information

LEGEND

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td>FLAMMABILITY</td>
<td>1</td>
</tr>
<tr>
<td>PHYSICAL HAZARD</td>
<td>0</td>
</tr>
<tr>
<td>PERSONAL PROTECTION</td>
<td>X</td>
</tr>
</tbody>
</table>

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

Issue date
- 29-March-2018

Version #
- 01

Effective date
- 29-March-2018

Prepared by
- Nu-Calgon Technical Service   Phone: (314) 469-7000
For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.