MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name: C-3s Refrigeration Oil (4303)
CAS #: Mixture
Product use: Oil
Manufacturer: Nu-Calgon
2008 Altom Court
St. Louis, MO 63146 US
Phone: 314-469-7000 / 800-554-5499
Emergency Phone: 1-800-424-9300 (CHEMTREC)

2. Hazards Identification

Emergency overview: Contact may cause eye and skin irritation.
Potential short term health effects:
- **Routes of exposure**
  - Eye, Skin contact, Inhalation, Ingestion.
- **Eyes**
  - May cause irritation.
- **Skin**
  - May cause irritation.
- **Inhalation**
  - Excessive intentional inhalation may cause respiratory tract irritation and central nervous system effects (headache, dizziness).
- **Ingestion**
  - May cause stomach distress, nausea or vomiting.

**Target organs**
- Skin. Eyes.

**Chronic effects**
- Prolonged or repeated exposure can cause drying, defatting and dermatitis.

**Signs and symptoms**
- Symptoms may include redness, edema, drying, defatting and cracking of the skin.
- Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

3. Composition / Information on Ingredients

Composition comments: None by WHMIS/OSHA criteria.

4. First Aid Measures

First aid procedures:
- **Eye contact**
  - Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention if irritation persists.
- **Skin contact**
  - Flush with cool water. Wash with soap and water. Obtain medical attention if irritation persists.
- **Inhalation**
  - If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.
- **Ingestion**
  - Do not induce vomiting. Rinse mouth with water, then drink one or two glasses of water. Obtain medical attention. Never give anything by mouth if victim is unconscious, or is convulsing.

Notes to physician:
- Symptoms may be delayed.

General advice:
- 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

Flammable properties Not flammable by WHMIS/OSHA criteria.
Extinguishing media
   Unsuitable extinguishing media Not available
Protection of firefighters
   Specific hazards arising from the chemical Not available
   Protective equipment for firefighters Firefighters should wear full protective clothing including self contained breathing apparatus.
Hazardous combustion products May include and are not limited to: Oxides of carbon.
Explosion data
   Sensitivity to mechanical impact Not available
   Sensitivity to static discharge Not available

6. Accidental Release Measures

Personal precautions Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
Methods for containment Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.
Methods for cleaning up Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills in original containers for re-use.

7. Handling and Storage

Handling Use good industrial hygiene practices in handling this material.
Storage Keep out of reach of children. Store in a closed container away from incompatible materials.

8. Exposure Controls / Personal Protection

Engineering controls General ventilation normally adequate.
Personal protective equipment
   Eye / face protection Wear safety glasses with side shields.
   Hand protection Rubber gloves. Confirm with a reputable supplier first.
   Skin and body protection As required by employer code.
   Respiratory protection Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Avoid breathing mists or vapors.
   General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

9. Physical & Chemical Properties

Appearance Clear.
Color Straw colored
Form Liquid
Odor Mild petroleum
Odor threshold Not available
Physical state Liquid
pH Not available
Melting point -42.77 °C (-45 °F)
Freezing point Not available
Boiling point > 260 °C (> 500.00 °F)
Flash point 165.55 °C (330 °F)
Evaporation rate Not available
Flammability limits in air, lower, % by volume Not available
Flammability limits in air, upper, % by volume Not available
Vapor pressure < 0.001 mmHg @ 20°C
Vapor density > 5
Specific gravity 0.9129
Octanol/water coefficient Not available
Solubility (H2O) Negligible
Auto-ignition temperature 343 °C (649.40 °F)
VOC (Weight %) Not available
Viscosity 157.2 SUS @ 100°F
Percent volatile Not available

10. Chemical Stability & Reactivity Information

Chemical stability Stable under recommended storage conditions.
Conditions to avoid Do not mix with other chemicals.
Incompatible materials Oxidizers.
Hazardous decomposition products May include and are not limited to: Oxides of carbon.
Possibility of hazardous reactions Hazardous polymerization does not occur.

11. Toxicological Information

Effects of acute exposure
   Eye May cause irritation.
   Skin May cause irritation.
   Inhalation Excessive intentional inhalation may cause respiratory tract irritation and central nervous system effects (headache, dizziness).
   Ingestion May cause stomach distress, nausea or vomiting.
Sensitization Non-hazardous by WHMIS/OSHA criteria.
Chronic effects Non-hazardous by WHMIS/OSHA criteria.
Carcinogenicity Non-hazardous by WHMIS/OSHA criteria.
Mutagenicity Non-hazardous by WHMIS/OSHA criteria.
Reproductive effects Non-hazardous by WHMIS/OSHA criteria.
Teratogenicity Non-hazardous by WHMIS/OSHA criteria.

12. Ecological Information

Ecotoxicity Components of this product are hazardous to aquatic life.
Environmental effects Not available
Aquatic toxicity Not available
Persistence / degradability Not available
Bioaccumulation / accumulation Not available
Partition coefficient Not available
Mobility in environmental media Not available
Chemical fate information Not available

13. Disposal Considerations

Waste codes Not available
Disposal instructions Dispose in accordance with all applicable regulations.
Waste from residues / unused products Not available
14. Transport Information

U.S. Department of Transportation (DOT)
Not regulated as dangerous goods.

Transportation of Dangerous Goods (TDG - Canada)
Not regulated as dangerous goods.

15. Regulatory Information

**Canadian federal regulations**
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**US Federal regulations**
This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

**Occupational Safety and Health Administration (OSHA)**
29 CFR 1910.1200 hazardous chemical
No

**CERCLA (Superfund) reportable quantity**
None

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

Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance
No

Section 311 hazardous chemical
No

**Clean Air Act (CAA)**
Not available

**Clean Water Act (CWA)**
Not available

**Safe Drinking Water Act (SDWA)**
Not available

**Drug Enforcement Agency (DEA)**
Not available

**Food and Drug Administration (FDA)**
Not available

**WHMIS status**
Not Controlled

**State regulations**
This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**Inventory name**

<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>
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</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

**Disclaimer**
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**
22-Jul-2011

**Effective date**
22-Jul-2011