1 Identification

- **Product identifier**
  - Trade name: Cargille Immersion Oil Type FF
  - Product code: 16212
  - CAS Number: Trade Secret

- **Recommended use and restriction on use**
  - **Recommended use:**
    - This SDS or an accurate copy is an integral part of using Immersion Oil Type FF. Only use Immersion Oil Type FF if the SDS is present. Conditions prevailing in this document, unless otherwise noted: Temperature = 23°C(73°F), Pressure = 1013.25 hPa (760 mm Hg).
    - For professional and R&D use only. Conditions of Intended Use: (ABBR. C.I.U.) As a Microscope Immersion Oil at normal room pressure 101.32 kPa (760 mm Hg), temperature 7°C to 40°C (45°F to 104°F) in a non-misted / non airborne state in a room having normal air changes (2) / HR., in a trained and supervised laboratory / industrial setting using standard Good Laboratory/Good Manufacturing procedures. Note: Product normally sold in ¼ oz (7.4cc), 1 oz (30cc), 4 oz (120cc), 16 oz (480cc), and gallon (3.84L) quantities. Used in single drop to a few cubic centimeters per application. See requisitioner for specific quantities involved.

- **Restrictions on use:** Contact manufacturer

- **Details of the supplier of the Safety Data Sheet**
  - **Manufacturer/Supplier:**
    - Cargille Laboratories
    - 55 Commerce Road
    - Cedar Grove, NJ 07009-1289 USA
    - 973-239-6633
    - www.cargille.com
  - **Emergency telephone number:**
    - ChemTel Inc.
    - (800)255-3924, +1 (813)248-0585

2 Classification(s) identification

- **Classification of the substance or mixture**
  - The substance is not classified as hazardous according to the Globally Harmonized System (GHS).

- **Label elements**
  - **GHS label elements** Not regulated.
  - **Hazard pictograms:** Not regulated.
  - **Signal word:** Not regulated.
  - **Hazard statements:** Not regulated.

- **Other hazards** There are no other hazards not otherwise classified that have been identified.

(Cont'd. on page 2)
3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  Trade Secret

- Additional information:
  For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.

4 First-aid measures

- Description of first aid measures
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact:
    Immediately wash with water and soap and rinse thoroughly.
    If skin irritation continues, consult a doctor.
  - After eye contact:
    Remove contact lenses if worn.
    Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - After swallowing:
    Rinse out mouth and then drink plenty of water.
    Do not induce vomiting; immediately call for medical help.
  - Most important symptoms and effects, both acute and delayed:
    Gastric or intestinal disorders when ingested.
  - Indication of any immediate medical attention and special treatment needed:
    If medical advice is needed, have product container or label at hand.

5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents:
    Foam
    Fire-extinguishing powder
    Gaseous extinguishing agents
    Carbon dioxide
    Water fog / haze
  - For safety reasons unsuitable extinguishing agents:
    Water stream.
    Water spray
- Special hazards arising from the substance or mixture
  No relevant information available.
- Advice for firefighters
- Protective equipment:
  Wear self-contained respiratory protective device.

(Cont'd. on page 3)
6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**
  Wear protective equipment. Keep unprotected persons away.
  Ensure adequate ventilation.
- **Environmental precautions:**
  Do not allow to enter sewers/ surface or ground water.
  Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Send for recovery or disposal in suitable receptacles.
- **Reference to other sections:**
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- **Handling**
  - **Precautions for safe handling:** Avoid splashes or spray in enclosed areas.
  - **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
  **Storage**
  - **Requirements to be met by storerooms and receptacles:**
    Avoid storage near extreme heat, ignition sources or open flame.
    Store in a well-ventilated place. Keep cool.
  - **Information about storage in one common storage facility:**
    Store away from foodstuffs.
    Store away from oxidizers, strong acids, strong bases.
  - **Further information about storage conditions:**
    Storage Temperatures : 65 - 90 °F / 18 - 32 °C.
    Keep containers tightly sealed.
- **Specific end use(s):** No relevant information available.

8 Exposure controls/personal protection

- **Control parameters**
  - **Components with limit values that require monitoring at the workplace:**
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
**Trade name:** Cargille Immersion Oil Type FF

**Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  The usual precautionary measures for handling chemicals should be followed.
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing.
  Wash hands before breaks and at the end of work.
  Do not inhale gases / fumes / aerosols.
  Avoid contact with the eyes and skin.
- **Engineering controls:** No relevant information available.
- **Breathing equipment:** Not required under normal conditions of use.
- **Protection of hands:**
  ![Protective gloves]
  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- **Eye protection:**
  ![Safety glasses]
  Follow relevant national guidelines concerning the use of protective eyewear.
- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment**
  No relevant information available.

### 9 Physical and chemical properties

<table>
<thead>
<tr>
<th><strong>Information on basic physical and chemical properties</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance:</strong></td>
</tr>
<tr>
<td><strong>Form:</strong> Liquid</td>
</tr>
<tr>
<td><strong>Color:</strong> Colorless</td>
</tr>
<tr>
<td><strong>Odor:</strong> Odorless</td>
</tr>
<tr>
<td><strong>Odor threshold:</strong> Not determined.</td>
</tr>
</tbody>
</table>

| **pH-value:** Not applicable.                             |
| **Melting point/Melting range:** <0 °C (<32 °F)           |
| **Boiling point/Boiling range:** >230 °C (>446 °F) (1 atm / 1.0132 bar) |
| **Flash point:** 221 °C (430 °F) (Open Cup)              |
| **Flammability (solid, gaseous):** Not applicable.        |
| **Auto-ignition temperature:** Not determined.            |
| **Decomposition temperature:** Not determined.            |
| **Danger of explosion:** Not determined.                  |
**Trade name:** Cargille Immersion Oil Type FF

- **Explosion limits**
  - Lower: Not determined.
  - Upper: Not determined.
- **Vapor pressure:** <0.1 Pa (<0.75 mm Hg)
- **Density at 20 °C (68 °F):** <1.0 g/cm³ (<8.345 lbs/gal)
- **Relative density:** Not determined.
- **Vapor density:** Not determined.
- **Evaporation rate:** ca 1, (mineral oil=1)
- **Solubility in / Miscibility with**
  - Water: Not miscible or difficult to mix.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity**
  - Dynamic: Not determined.
  - Kinematic: 170 mm²/sec
- **Other information**
  - No relevant information available.

### 10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**
  - No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions:**
  - Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomized.
  - Reacts with strong oxidizing agents.
  - Reacts with strong acids and alkali.
- **Conditions to avoid:**
  - Excessive heat.
  - Store away from oxidizing agents.
- **Incompatible materials:** No relevant information available.
- **Hazardous decomposition products:**
  - Under fire conditions only:
    - Carbon monoxide and carbon dioxide

### 11 Toxicological information

- **Information on toxicological effects**
  - Acute toxicity:
    - LD/LC50 values that are relevant for classification: None.
  - Primary irritant effect:
    - On the skin: Based on available data, the classification criteria are not met.
    - On the eye: Based on available data, the classification criteria are not met.
Safety Data Sheet
acc. to OSHA HCS (29 CFR 1910.1200) and WHMIS 2015 regulations

Trade name: Cargille Immersion Oil Type FF

- Sensitization: Based on available data, the classification criteria are not met.

<table>
<thead>
<tr>
<th>IARC (International Agency for Research on Cancer):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance is not listed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NTP (National Toxicology Program):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance is not listed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OSHA-Ca (Occupational Safety &amp; Health Administration):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance is not listed.</td>
</tr>
</tbody>
</table>

- Probable route(s) of exposure:
  - Ingestion.
  - Inhalation.
  - Eye contact.
  - Skin contact.
- Acute effects (acute toxicity, irritation and corrosivity): None.
- Repeated dose toxicity: None.
- CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
  - Germ cell mutagenicity: Based on available data, the classification criteria are not met.
  - Carcinogenicity: Based on available data, the classification criteria are not met.
  - Reproductive toxicity: Based on available data, the classification criteria are not met.
- STOT-single exposure: Based on available data, the classification criteria are not met.
- STOT-repeated exposure: Based on available data, the classification criteria are not met.
- Aspiration hazard: Based on available data, the classification criteria are not met.

12 Ecological information

- Toxicity
  - Aquatic toxicity No relevant information available.
  - Persistence and degradability No relevant information available.
  - Bioaccumulative potential:
    - Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.
  - Mobility in soil: No relevant information available.
  - Ecotoxicological effects:
  - Remark:
    - Harmful to fish
    - Toxic for water fleas

- Additional ecological information
  - General notes:
    - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
    - Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

(Cont'd. on page 7)
13 Disposal considerations

- Waste treatment methods
  - **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

- **Uncleaned packagings**
  - **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN-Number</strong></td>
<td><strong>DOT, ADR, IMDG, IATA</strong></td>
</tr>
<tr>
<td></td>
<td>Not regulated.</td>
</tr>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td><strong>DOT, ADR, IMDG, IATA</strong></td>
</tr>
<tr>
<td></td>
<td>Not regulated.</td>
</tr>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td><strong>DOT, ADR, IMDG, IATA</strong></td>
</tr>
<tr>
<td><strong>Class</strong></td>
<td>Not regulated.</td>
</tr>
<tr>
<td><strong>Packing group</strong></td>
<td><strong>DOT, ADR, IMDG, IATA</strong></td>
</tr>
<tr>
<td></td>
<td>Not regulated.</td>
</tr>
<tr>
<td><strong>Environmental hazards</strong></td>
<td><strong>Marine pollutant:</strong></td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</strong></td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- United States (USA)
- SARA

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 302 (extremely hazardous substances):</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Substance is not listed.</td>
</tr>
<tr>
<td>Trade name: Cargille Immersion Oil Type FF</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>Section 355 (extremely hazardous substances):</strong></td>
<td></td>
</tr>
<tr>
<td>Substance is not listed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>Section 313 (Specific toxic chemical listings):</strong></td>
<td></td>
</tr>
<tr>
<td>Substance is not listed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>TSCA (Toxic Substances Control Act)</strong></td>
<td></td>
</tr>
<tr>
<td>Substance is listed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>Proposition 65 (California)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>Chemicals known to cause cancer:</strong></td>
<td></td>
</tr>
<tr>
<td>Substance is not listed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>Chemicals known to cause reproductive toxicity for females:</strong></td>
<td></td>
</tr>
<tr>
<td>Substance is not listed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>Chemicals known to cause reproductive toxicity for males:</strong></td>
<td></td>
</tr>
<tr>
<td>Substance is not listed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>Chemicals known to cause developmental toxicity:</strong></td>
<td></td>
</tr>
<tr>
<td>Substance is not listed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>Carcinogenic categories</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>EPA (Environmental Protection Agency):</strong></td>
<td></td>
</tr>
<tr>
<td>Substance is not listed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>IARC (International Agency for Research on Cancer):</strong></td>
<td></td>
</tr>
<tr>
<td>Substance is not listed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>NIOSH-Ca (National Institute for Occupational Safety and Health):</strong></td>
<td></td>
</tr>
<tr>
<td>Substance is not listed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>Canadian Domestic Substances List (DSL):</strong></td>
<td></td>
</tr>
<tr>
<td>Substance is listed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>Chemical safety assessment:</strong> A Chemical Safety Assessment has not been carried out.**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 16 Other information

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. The information supplied is based on data available to us and is believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to this information presented and Cargille Laboratories assumes no responsibility for the result of the use of this product. This information is furnished upon the condition that the persons responsible for its use shall make their own determination of the suitability of the material for their particular purpose. Please note that we consider the English version to be the authoritative version for compliance and regulatory purposes.

- **Date of preparation / last revision** 09/02/2016 / -

- **Abbreviations and acronyms:**
  - ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

(Cont’d. on page 9)
**Safety Data Sheet**

acc. to OSHA HCS (29 CFR 1910.1200) and WHMIS 2015 regulations

Printing date: 09/02/2016
Revision: 09/02/2016

**Trade name:** Cargille Immersion Oil Type FF

| IMDG: International Maritime Code for Dangerous Goods |
| DOT: US Department of Transportation |
| IATA: International Air Transport Association |
| CAS: Chemical Abstracts Service (division of the American Chemical Society) |
| LC50: Lethal concentration, 50 percent |
| LD50: Lethal dose, 50 percent |
| PBT: Persistent, Bioaccumulative and Toxic |
| vPvB: very Persistent and very Bioaccumulative |
| NIOSH: National Institute for Occupational Safety |
| OSHA: Occupational Safety & Health |
| LDLo: Lowest Lethal Dose Observed |

**Sources**
- Website, European Chemicals Agency (echa.europa.eu)
- Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)
- Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
- Safety Data Sheets, Individual Manufacturers

**SDS Prepared by:**
- ChemTel Inc.
- 1305 North Florida Avenue
- Tampa, Florida USA 33602-2902
- Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
- Website: www.chemtelinc.com