**LF5050 Lubricating Fluid**

**MSDS**

**Product Safety**

Nomenclature: Lubricating Fluid - Non Explosive, Non Flammable

Part Number: LF5050

NSN: 9150-21-920-6522

Unit of Issue: Ea. - 8 oz. Bottle (Plastic) (250 ml)

Composition: 50% Ethylene Glycol (certified); 50% Distilled Water

Shelf Life: 3 Years

General Precautions:
- **AVOID PROLONGED OR REPEATED BREATHING OF VAPOUR.**
- **DO NOT TAKE INTERNALLY**

Chemical component: Ethylene Glycol

**MSDS Source URL:** [https://www.fishersci.ca/msdsSearchResults.do](https://www.fishersci.ca/msdsSearchResults.do)

Enter: CAS # 107-21-1

or

CAT # AC410010025
Acros Organics
Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name  Ethylene glycol
Cat No.    AC410010000; AC410010010; AC410010025
Synonyms    Monoethylene glycol; 1, 2-Ethanediol
Recommended Use  Laboratory chemicals

Company    Emergency Telephone Numbers
Fisher Scientific    Acros Organics
One Reagent Lane    One Reagent Lane
Fair Lawn, NJ 07410    Fair Lawn, NJ 07410
Tel: (201) 796-7100    Emergency Number, US: 001-201-796-7100
                   Emergency Number, Europe: +32 14 57 52 99
                   CHEMTREC phone number, US: 001-800-424-9300
                   CHEMTREC phone number, Europe: 001-703-527-3887

2. HAZARDS IDENTIFICATION

Warning !

Emergency Overview
Harmful if swallowed. May cause central nervous system effects. May cause skin, eye, and respiratory tract irritation. Hygroscopic.

Appearance - No Information Available  Physical State - viscous liquid  Odor - odorless

Target Organs  Central nervous system (CNS), Liver, Kidney
Potential Health Effects

Acute Effects - Principle Routes of Exposure

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>May cause irritation.</td>
</tr>
<tr>
<td>Skin</td>
<td>May be harmful in contact with skin. May cause irritation.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>May be harmful if inhaled. May cause irritation of respiratory tract.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Harmful if swallowed. May cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.</td>
</tr>
</tbody>
</table>

Chronic Effects
Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects. May cause adverse kidney effects.

See Section 11 for additional Toxicological information.


3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>107-21-1</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Inhalation
Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Get medical attention immediately if symptoms occur.

Ingestion
Do not induce vomiting. Call a physician or Poison Control Center immediately.

Notes to Physician
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point
116°C / 240.8°F

Method -
No information available.

Autoignition Temperature
413°C / 775.4°F

Explosion Limits
Upper
15.30 vol %

Lower
3.20 vol %

Suitable Extinguishing Media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media
No information available.

Hazardous Combustion Products
No information available.

Sensitivity to mechanical impact
No information available.

Sensitivity to static discharge
No information available.

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Ensure adequate ventilation. Use personal protective equipment.

Environmental Precautions
Should not be released into the environment.

Methods for Containment and Clean-Up
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Wear personal protective equipment. Ensure adequate ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>Ceiling: 100 mg/m³</td>
<td>(Vacated) Ceiling: 50 ppm (Vacated) Ceiling: 50 ppm</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Quebec</th>
<th>Mexico OEL (TWA)</th>
<th>Ontario TWAEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>Ethylene glycol Ceiling: 50 ppm Ceiling: 127 mg/m³</td>
<td>Peak: 100 mg/m³ CEV: 100 mg/m³</td>
<td>Peak: 100 mg/m³ CEV: 100 mg/m³</td>
</tr>
</tbody>
</table>

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

Eye/face Protection
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA’s eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

Skin and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: viscous liquid
Appearance: No information available.
Odor: odorless
Odor Threshold: No information available.
pH: 5.5-7.5 50% aq. sol.
Vapor Pressure: 0.12 mmHg @ 20 °C
Vapor Density: 2.14 (Air = 1.0)
Viscosity: 21 cP (20°C)
Boiling Point/Range: 196 - 198°C / 384.8 - 388.4°F@ 760 mmHg
Melting Point/Range: > 500°C
Flash Point: 116°C / 240.8°F
Evaporation Rate: No information available.
Specific Gravity: 1.113
Solubility: Soluble in water
log Pow: No data available
Molecular Weight: 62.06
Molecular Formula: C2 H6 O2

10. STABILITY AND REACTIVITY

Stability: Hygroscopic.
Conditions to Avoid: Incompatible products. Excess heat. Exposure to moist air or water.
Incompatible Materials: Strong oxidizing agents, Strong acids, Strong bases, Aldehydes
Hazardous Decomposition Products: Carbon monoxide (CO), Carbon dioxide (CO2)
Hazardous Polymerization: Hazardous polymerization does not occur.
Hazardous Reactions: None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>4000 mg/kg ( Rat )</td>
<td>9530 μL/kg ( Rabbit )</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Irritation: No information available.
Toxicologically Synergistic Products: No information available.

Chronic Toxicity
Carcinogenicity: There are no known carcinogenic chemicals in this product
Sensitization: No information available.
Mutagenic Effects: Mutagenic effects have occurred in humans.
Reproductive Effects: Experiments have shown reproductive toxicity effects on laboratory animals.
Developmental Effects: Developmental effects have occurred in experimental animals.
Teratogenicity: No information available.
Other Adverse Effects: See actual entry in RTECS for complete information.
Endocrine Disruptor Information: No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity
Do not empty into drains.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>6500 - 13000 mg/L EC50 96 h</td>
<td>27540 mg/L LC50 96 h</td>
<td>EC50 = 10000 mg/L 16 h</td>
<td>46300 mg/L EC50 = 48 h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16000 mg/L LC50 96 h</td>
<td>EC50 = 620 mg/L 30 min</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>41000 mg/L LC50 96 h</td>
<td>EC50 = 620.0 mg/L 30 min</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>14 - 18 m/L LC50 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>40000 - 60000 mg/L LC50 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>40761 mg/L LC50 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>46300 mg/L EC50 = 48 h</td>
</tr>
</tbody>
</table>

Persistence and Degradability: Readily biodegradable.
Bioaccumulation/ Accumulation: No information available
Mobility

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>-1.93</td>
</tr>
</tbody>
</table>
13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>CHINA</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>T</td>
<td>X</td>
<td>-</td>
<td>203-473-3</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- X - Listed
- E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
- F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
- N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
- P - Indicates a commenced PMN substance
- R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
- S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
- T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
- XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
- Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
- Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>SARA 313 – Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>107-21-1</td>
<td>&gt;95</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous Categorization:

Acute Health Hazard Yes
Chronic Health Hazard No
Fire Hazard No
Sudden Release of Pressure Hazard No
Reactive Hazard No

Clean Water Act
Not applicable

Clean Air Act

<table>
<thead>
<tr>
<th>Component</th>
<th>HAPS Data</th>
<th>Class 1 Ozone Depleters</th>
<th>Class 2 Ozone Depleters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>x -</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OSHA
Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>5000 lb</td>
<td>-</td>
</tr>
</tbody>
</table>
California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation
Reportable Quantity (RQ): Y
DOT Marine Pollutant: N
DOT Severe Marine Pollutant: N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations
Mexico - Grade: Slight risk, Grade 1

Canada - This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

D1B Toxic materials

D2A Very toxic materials

16. OTHER INFORMATION

Prepared By: Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

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Print Date: 01-Mar-2013
Revision Summary: (M)SDS sections updated 3

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS