1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Ethylene glycol dimethyl ether
Cat No. AC610350000; AC610350010; AC610351000
Synonyms Monoglyme; 1,2-Dimethoxyethane
Recommended Use Laboratory chemicals

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information in the US, call: 001-800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
Emergency Number, US: 001-201-796-7100
CHEMTREC Phone Number, US: 001-800-424-9300
CHEMTREC Phone Number, Europe: 001-703-527-3887

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview
Flammable liquid and vapor. Toxic by inhalation, in contact with skin and if swallowed. May cause skin, eye, and respiratory tract irritation.

Appearance Colorless
Physical State Liquid
odor Petroleum distillates

Target Organs None known.
Potential Health Effects
Acute Effects

Principle Routes of Exposure

- **Eyes**: May cause irritation.
- **Skin**: Toxic in contact with skin. May cause irritation.
- **Inhalation**: Toxic by inhalation. May cause irritation of respiratory tract.
- **Ingestion**: Toxic if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects
None known.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions
No information available.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Haz/Non-haz</th>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ethylene glycol dimethyl ether</td>
<td>110-71-4</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. Immediate medical attention is required.

**Skin Contact**
Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**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. Immediate medical attention is required.

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

**Notes to Physician**
Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

- **Flash Point** -6°C / 21.2°F
- **Method** No information available.
- **Autoignition Temperature** 200°C / 392°F
- **Explosion Limits**
  - Upper 10.40%
  - Lower 1.60%
- **Suitable Extinguishing Media** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Cool closed containers exposed to fire with water spray.
- **Unsuitable Extinguishing Media** No information available.
- **Hazardous Combustion Products** No information available.
- **Sensitivity to mechanical impact** No information available.
6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Use personal protective equipment. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

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. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. HANDLING AND STORAGE

Handling
Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use explosion-proof equipment. Do not breathe vapors/dust. Do not ingest. Take precautionary measures against static discharges.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures
Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

<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 dimethyl ether</td>
<td></td>
<td></td>
<td>TWA: 5 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TWA: 18 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin</td>
</tr>
</tbody>
</table>

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

<table>
<thead>
<tr>
<th>Eye/face Protection</th>
<th>Skin and body protection</th>
<th>Respiratory Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>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 EN 166.</td>
<td>Wear appropriate protective gloves and clothing to prevent skin exposure.</td>
<td>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.</td>
</tr>
</tbody>
</table>
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Colorless</td>
</tr>
<tr>
<td>odor</td>
<td>Petroleum distillates</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available.</td>
</tr>
<tr>
<td>pH</td>
<td>No information available.</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>64 hPa @ 20 °C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>3.1 (Air = 1.0)</td>
</tr>
<tr>
<td>Viscosity</td>
<td>1.1 mPa.s at 20 °C</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>84 - 86°C / 183.2 - 186.8°F @ 760 mmHg</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>-69°C / -92.2°F</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>-6°C / 21.2°F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>(Butyl Acetate = 1.0)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.867</td>
</tr>
<tr>
<td>Solubility</td>
<td>Miscible with water</td>
</tr>
<tr>
<td>log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>90.12</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>C4H10O2</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Stable under normal conditions.</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.</td>
</tr>
<tr>
<td>Incompatible Materials</td>
<td>Strong oxidizing agents</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Carbon monoxide (CO), Carbon dioxide (CO₂)</td>
</tr>
<tr>
<td>Hazardous Polymerization</td>
<td>Hazardous polymerization does not occur.</td>
</tr>
<tr>
<td>Hazardous Reactions</td>
<td>None under normal processing.</td>
</tr>
</tbody>
</table>

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

<table>
<thead>
<tr>
<th>Component Information</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component</td>
<td>LD50 Oral (LD50 Dermal, LC50 Inhalation)</td>
</tr>
<tr>
<td>Ethylene glycol dimethyl ether</td>
<td>775 mg/kg (Rat), Not listed, Not listed</td>
</tr>
</tbody>
</table>

Irritation

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irritation</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

Toxicologically Synergistic Products

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicologically Synergistic Products</td>
<td>No information available.</td>
</tr>
</tbody>
</table>
Chronic Toxicity

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol dimethyl ether</td>
<td>Not listed</td>
<td>group 2</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Sensitization
No information available.

Mutagenic Effects
No information available.

Reproductive Effects
May impair fertility.

Developmental Effects
May cause harm to the unborn child.

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.

Persistence and Degradability
No information available

Bioaccumulation/ Accumulation
No information available

Mobility

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

UN-No            UN2252
Proper Shipping Name 1,2-DIMETHOXYETHANE
Hazard Class         3
Packing Group       II

TDG
14. TRANSPORT INFORMATION

UN-No: UN2252  
Proper Shipping Name: 1,2-DIMETHOXYETHANE  
Hazard Class: 3  
Packing Group: II

IATA

UN-No: UN2252  
Proper Shipping Name: 1,2-Dimethoxyethane  
Hazard Class: 3  
Packing Group: II

IMDG/IMO

UN-No: UN2252  
Proper Shipping Name: 1,2-Dimethoxyethane  
Hazard Class: 3  
Packing Group: II

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 dimethyl ether</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>203-794-9</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</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>
</table>
Ethylene glycol dimethyl ether 110-71-4 >95 1.0

SARA 311/312 Hazardous Categorization
Acute Health Hazard  No
Chronic Health Hazard No
Fire Hazard Yes
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 dimethyl ether</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OSHA
Not applicable

CERCLA
Not Applicable

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 dimethyl ether</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation
Reportable Quantity (RQ): N
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  Serious risk, Grade 3

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
B2  Flammable liquid  E  Corrosive material
16. OTHER INFORMATION

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

Creation Date
20-Aug-2009

Print Date
22-Sep-2009

Revision Summary
“***”, and red text indicates revision

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