**SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**CAS Number:** 64-17-5

**Company Name:** Fisher Scientific Company LLC

**Address:** 8365 Valley Pike

**City:** Manassas, VA 20109

**Telephone:** 703-527-1500

**Emergency Number:** 800-227-7337

**Emergency Telephone:** 800-227-1227

**E-mail:** Customerservice@fishersci.com

**URL:** www.fishersci.com

**Silliman Testing:** 

**Chemical Name:** Ethylene Oxide

**CAS Number:** 75-09-2

**UN Number:** 1005

**Risk Phrases:** 11 20/31/32 68/20/21/22

**Hazard Statements:** 

- **Health:** Skin corrosion/irritant.
- **Environment:** May cause severe irritation of eyes, skin, respiratory tract and throat. May cause severe irritation of eyes, skin, respiratory tract and throat.

**Ingestion:** 

- **Health:** May cause severe irritation of eyes, skin, respiratory tract and throat. May cause severe irritation of eyes, skin, respiratory tract and throat.

**Inhalation:** 

- **Health:** May cause severe irritation of eyes, skin, respiratory tract and throat. May cause severe irritation of eyes, skin, respiratory tract and throat.

**Environmental Hazards:** 

- **Release into the Environment:** May cause severe irritation of eyes, skin, respiratory tract and throat. May cause severe irritation of eyes, skin, respiratory tract and throat.

**Precautionary Statements:** 

- **Preventive:** Skin protection: Wear protective clothing and use protective devices/eye protective equipment. Remove contaminated clothing and wash immediately. Skin protection: Wear protective clothing and use protective devices/eye protective equipment. Remove contaminated clothing and wash immediately.

**Exposure Limits:** 

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSTI</th>
<th>OSHA Final PEL</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA Final PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene Oxide</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**Additional Information:** 

- **Exposure Limits:** 
  - **ACGIH:** 500 ppm, TLV
  - **NIOSH:** 100 ppm
  - **OSHA Final PEL:** 500 ppm

**Exposure Countermeasures:** 

- **Control Measures:** 
  - **Local:** Use local exhaust ventilation. 
  - **General:** Use general ventilation. 

**Engineering Controls:** 

- **Ventilation:** Use general and local exhaust ventilation. 

**Personal Protective Equipment:** 

- **Respiratory Protection:** Use a respirator with a canister. 

**Fire Fighting Measures:** 

- **General:** Use water, foam, or other carbon dioxide extinguishing agents. 

**Hazardous Combustion Products:** 

- **Carbon monoxide.**
**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

**Physical State:** Liquid

**Color:** Clear, colorless

**Odor:** Aromatic odor

**No Data**

**Vapor Pressure:** 44 mm Hg

**Vapor Density (Air = 1.0):** 1.04 kg/m³

**Evaporation Rate:** No data

**Vapor-Liquid Coefficient:** 1.2 cp

**Boiling Point:** 173.3 deg F

**Melting Point:** 371.4 deg F

**Decomposition Temperature:** Not available.

**Solubility in Water:** Soluble

**Specific Gravity/Density:** 0.8

**Molecular Formula:** C₅H₁₀ CH₂OH

**Molecular Weight:** 46.0414

**SECTION 10 - STABILITY AND REACTIVITY**

**Chemical Stability:** Stability unknown. This material may be sensitive to peroxide formation.

**Conditions to Avoid:** High temperatures, incompatible materials, ignition sources, excess heat, oxidizers.

**Incompatibilities with Other Materials:** Acetyl bromide, alkyl aluminum salts, beryllium dihydride, carbon tetrachloride + metals, chlorofluorocarbon + heat, chlorofluorocarbon + sodium hydroxide, cyanogen chloride, diethylaniline, lanthanum, nitric acid, potassium tert-butoxide, stronite, acetic acid, sodium hypochlorite, perchloric acid, phosphorus trichloride. Attacks some forms of rubber, natural and synthetic rubbers, nitrile rubber, polyethylene, alcohols, ketones, esters, primary and secondary alcohols, primary and secondary amines, alkali metals, ammonia, hydrazine, peroxides, sodium acetate, sodium acrylate, potassium hydroxide, chlorite, chlorine, peroxide, bromine pentafluoride, silver nitrate, mercuric nitrate, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, disulfur dichloride, tetraethyl platinum, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl peroxide, potassium dichromate.

**Hazardous Decomposition Products:** Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

**Hazardous Polymerization:** Not been reported.

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**SECTION 11 - TOXICOLOGICAL INFORMATION**

**ETCSCs:**

CAS# 64-17-5: KD 30000000  
CAS# 87-56-1: DC 10000000

**LD₅₀ (LC₅₀):**

CAS# 64-17-5: Oral test, rabbit, eye: 500 mg Severe; Draize test, rabbit, eye: 500 mg/24H Mild; Draize test, rabbit, skin: 20 mg/24H Moderate. LC₅₀ = 20000 ppm; Oral, mouse: LD₅₀ = 3450 mg/kg; Oral, rabbit: LD₅₀ = 5000 mg/kg; Inhalation, rat: LC₅₀ = 7800 mg/kg.

CAS# 87-56-1: Draize test, rabbit, eye: 40 mg Moderate; Draize test, rabbit, eye: 100 mg/24H Moderate; Draize test, rabbit, skin: 20 mg/24H Moderate; Inhalation, rat: LC₅₀ = 12000 ppm/4H; Inhalation, rat: LC₅₀ = 64000 ppm/4H; Oral, mouse: LD₅₀ = 7300 mg/kg; Oral, rabbit: LD₅₀ = 12000 mg/kg; Inhalation, mouse: LD₅₀ = 51000 mg/kg; Inhalation, rat: LC₅₀ = 72600 mg/kg; Inhalation, rat: LC₅₀ = 16000 ppm/4H; Oral, mouse: LD₅₀ = 3600 mg/kg; Oral, rabbit: LD₅₀ = 6140 mg/kg; Oral, rat: LD₅₀ = 5045 mg/kg; Skin, rabbit: LD₅₀ = 12800 mg/kg.

**Carcinogenicity:**

Ethyl alcohol - Not Classifiable as a human carcinogen

Methyl alcohol - Not listed by ACGIH, NIOSH, NTP, or OSHA.

Isopropyl alcohol - Not Classifiable as a human carcinogen

**ACGIH:** A4

**OSHA:** Group 3 carcinogen

**Epidemiology:**

Ethanol and phentolamine are known to produce toxicity in the embryo or fetus in laboratory animals. These developmental abnormalities include skeletal and cardiovascular systems.

**Teratogenicity:**

CAS# 64-17-5: Oral, human - TDLo = 41 g/kg (female 41 days after conception); Effects on newborn - Appar score (human only) and effects on other neonatal measures or effects and effects on reproduction.

**Reproductive Effects:**

CAS# 64-17-5: Oral, female - 500 mg/kg (female 5 day(s) pre-mating) Fertility: No effects; Female fertility indices: No effects; Females pregnant per # females mated: No data.

**Mutagenicity:**

CAS# 64-17-5: DNA Inhibition: Human, Lymphocyte = 220 mmol/L; Cytogenetic Analysis: Human, Fibroblasts = 12000 ppm; Cytogenetic Analysis: Salmonella, bacteria sensitive = 1 ppm/24H (Continuous); Salmonella, bacteria resistant = 1 ppm/24H (Continuous).

**Other Studies:**

The hazards associated with methanol may be seen in this product.

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**SECTION 12 - ECOLOGICAL INFORMATION**

**Ecotoxicity:**

Fish: Rainbow trout: LC₅₀ = 12900-15300 mg/L; 48 Hr; Flow-through 24-24.36 CF/Rainbow trout: LC₅₀ = 11200 mg/L; 48 Hr; Fingering (Chlorotic/Bacteria: Phytophthora physporum: EC₅₀ = 14600 mg/L; 5-30 min; Microtox test) CAS# 64-17-5: When spilled on land it is apt to volatilize, biodegrade, and leach into the groundwater, but no data on the rates of these processes could be found, its fate in groundwater is unknown. When released into water it will volatilize and probably biodegrade, it would not be expected to adsorb to sediment or biocentrífuge in fish.

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**SECTION 13 - DISPOSAL CONSIDERATIONS**

Chemical waste generators must determine whether a discarded chemical is a hazardous waste.

US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local waste regulations to ensure complete and accurate classification.

**California P-Ser Class:** None listed.

**PCB D-Series:** CAS# 67-56-1; Waste number U154 (Ignitable waste).

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**SECTION 14 - TRANSPORT INFORMATION**

**US DOT:** 4.3
**US FEDERAL**

**TSCA**
CASE 64-17-5 is listed on the TSCA inventory.
CASE 67-56-1 is listed on the TSCA inventory.

**CAS# 67-56-1**

**SARA**

**Table 320 Extremely Hazardous Substances**
None of the chemicals in this product have a TQG.

**SARA Codes**
CASE 64-17-5: acute, chronic, flammable.
CASE 67-56-1: acute, flammable.
CASE 67-63-0: acute, chronic, flammable.

**Section 313**

This material contains Methyl alcohol (CAS# 67-56-1, 5%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

**CERCLA**

**Table 100 Extremely Hazardous Substances**
None of the chemicals in this material have a SNUR under SARA.

**SARA**

**Table 302 Extremely Hazardous Substances**
None of the chemicals in this product have a TQG.

**OSHA**

None of the chemicals in this product are considered highly hazardous.

**STATE**

Ethyl alcohol can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota.

Methyl alcohol can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

Isopropyl alcohol can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota.

**WARNING**

This product contains Ethyl alcohol, a chemical known to the state of California to cause birth defects or other reproductive harm.

**California**
No Significant Risk Level.

None of the chemicals in this product are listed.

**Regional/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**
- R 11 Highly flammable.
- R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
- R 68/69/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

**Safety Phrases:**
- S 7 Keep container tightly closed.
- S 16 Keep away from sources of ignition - No smoking.
- S 37/39 Wear suitable protective clothing and gloves.
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**SDS Creation Date:**
6/19/1998

Revision #6 Date: 12/03/2002

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should rely on their own determinations to the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, however arising, even if the company has been advised of the possibility of such damages.

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**Other Information:**
- FLASHPOINT 14C
- **SECTION 15 - REGULATORY INFORMATION**
- **SECTION 16 - ADDITIONAL INFORMATION**