Material Safety Data Sheet
Ethyl Alcohol, Denatured (A407)

ACC# 08701

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Ethyl Alcohol, Denatured (A407)


**Synonyms:** Ethanol denatured; grain alcohol denatured; ethyl hydroxide denatured; ethyl hydrate denatured; alginin denatured

**Company Identification:**
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

**For information, call:** 201-796-7100
**Emergency Number:** 201-796-7100
**For CHEMTREC assistance, call:** 800-424-9300
**For International CHEMTREC assistance, call:** 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5</td>
<td>Ethyl alcohol</td>
<td>85.4-92.</td>
<td>200-578-6</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>5</td>
<td>231-791-2</td>
</tr>
<tr>
<td>67-56-1</td>
<td>Methyl alcohol</td>
<td>3.6</td>
<td>200-659-6</td>
</tr>
<tr>
<td>108-10-1</td>
<td>Methyl isobutyl ketone</td>
<td>1.9</td>
<td>203-550-1</td>
</tr>
<tr>
<td>141-78-6</td>
<td>Ethyl acetate</td>
<td>1.3</td>
<td>205-500-4</td>
</tr>
<tr>
<td>308082-09-9</td>
<td>Gasoline, aviation</td>
<td>1</td>
<td>unlisted</td>
</tr>
<tr>
<td>108-88-3</td>
<td>Toluene</td>
<td>0.8</td>
<td>203-625-9</td>
</tr>
<tr>
<td>64742-89-8</td>
<td>Solvent naphtha (petroleum), light aliphatic</td>
<td>0.72-0.7</td>
<td>265-192-2</td>
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<tr>
<td>67-63-0</td>
<td>Isopropyl alcohol</td>
<td>.0025</td>
<td>200-661-7</td>
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<tr>
<td>75-07-0</td>
<td>Acetaldehyde</td>
<td>.001</td>
<td>200-836-8</td>
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<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td>.0002</td>
<td>200-662-2</td>
</tr>
<tr>
<td>71-43-2</td>
<td>Benzene</td>
<td>trace</td>
<td>200-753-7</td>
</tr>
</tbody>
</table>

**Hazard Symbols:** F

**Risk Phrases:** 11

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: clear, colorless liquid. Flash Point: 13 deg C. **Danger!** Flammable liquid. Causes severe eye irritation. May cause skin irritation. May cause central nervous system depression. May cause liver and kidney damage. May cause reproductive and fetal effects. May be absorbed through
intact skin.

**Target Organs:** Kidneys, central nervous system, liver.

**Potential Health Effects**

**Eye:** Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. May cause painful sensitization to light. Vapors may cause eye irritation.

**Skin:** May cause skin irritation. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. May be absorbed through the skin.

**Ingestion:** May cause systemic toxicity with acidosis. May cause liver and kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

**Inhalation:** Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May cause respiratory tract irritation. May cause effects similar to those described for ingestion. May cause drowsiness, unconsciousness, and central nervous system depression.

**Chronic:** Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. Prolonged or repeated skin contact may cause defatting and dermatitis. Prolonged or repeated exposure may cause adverse reproductive effects. May cause fetal effects.

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**Section 4 - First Aid Measures**

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:** Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:** Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Notes to Physician:** Treat symptomatically and supportively.

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**Section 5 - Fire Fighting Measures**

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor. May form explosive peroxides. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

**Extinguishing Media:** In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.

**Flash Point:** 13 deg C (55.40 deg F)

**Autoignition Temperature:** 685 deg F (362.78 deg C)

**Explosion Limits, Lower:** 3.3 (ethanol)

**Upper:** 19 (ethanol)

**NFPA Rating:** (estimated) Health: 1; Flammability: 3; Instability: 0

https://fscimage.fishersci.com/msds/08701.htm

10/4/2004
Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8. **Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Use with adequate ventilation. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. **Storage:** Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>1000 ppm TWA</td>
<td>1000 ppm TWA; 1900 mg/m3 TWA</td>
<td>1000 ppm TWA; 1900 mg/m3 TWA</td>
</tr>
<tr>
<td>Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>200 ppm TWA; 250 ppm STEL; skin - potential for cutaneous absorption</td>
<td>200 ppm TWA; 260 mg/m3 TWA 6000 ppm IDLH</td>
<td>200 ppm TWA; 260 mg/m3 TWA</td>
</tr>
<tr>
<td>Methyl isobutyl ketone</td>
<td>50 ppm TWA; 75 ppm STEL</td>
<td>50 ppm TWA; 205 mg/m3 TWA 500 ppm IDLH</td>
<td>100 ppm TWA; 410 mg/m3 TWA</td>
</tr>
<tr>
<td>Ethyl acetate</td>
<td>400 ppm TWA</td>
<td>400 ppm TWA; 1400 mg/m3 TWA 2000 ppm IDLH</td>
<td>400 ppm TWA; 1400 mg/m3 TWA</td>
</tr>
<tr>
<td>Gasoline, aviation</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Toluene</td>
<td>50 ppm TWA; skin - potential for cutaneous absorption</td>
<td>100 ppm TWA; 375 mg/m3 TWA 500 ppm IDLH</td>
<td>200 ppm TWA; 300 ppm Ceiling</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aliphatic</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td>200 ppm TWA; 400 ppm STEL</td>
<td>400 ppm TWA; 980 mg/m3 TWA 2000 ppm IDLH</td>
<td>400 ppm TWA; 980 mg/m3 TWA</td>
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<tr>
<td>Acetaldehyde</td>
<td>25 ppm Ceiling</td>
<td>2000 ppm IDLH</td>
<td>200 ppm TWA; 360</td>
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<tr>
<td></td>
<td>500 ppm TWA; 750 ppm STEL</td>
<td>250 ppm TWA; 590 mg/m³ TWA 2500 ppm IDLH</td>
<td>1000 ppm TWA; 2400 mg/m³ TWA</td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------------</td>
<td>-----------------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Acetone</td>
<td></td>
<td>10 ppm TWA (apply only to exempt industry segments); 25 ppm Ceiling; 1 ppm PEL; 5 ppm STEL; 0.5 ppm Action Level (Cancer hazard,</td>
<td></td>
</tr>
<tr>
<td>Benzeze</td>
<td>0.5 ppm TWA; 2.5 ppm STEL; skin - potential for cutaneous absorption</td>
<td>0.1 ppm TWA 500 ppm IDLH</td>
<td></td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Ethyl alcohol: 1000 ppm TWA; 1900 mg/m³ TWA Water: No OSHA Vacated PELs are listed for this chemical. Methyl alcohol: 200 ppm TWA; 260 mg/m³ TWA Methyl isobutyl ketone: 50 ppm TWA; 205 mg/m³ TWA Ethyl acetate: 400 ppm TWA; 1400 mg/m³ TWA Gasoline, aviation: No OSHA Vacated PELs are listed for this chemical. Toluene: 100 ppm TWA; 375 mg/m³ TWA Solvent naphtha (petroleum), light aliphatic: No OSHA Vacated PELs are listed for this chemical. Isopropyl alcohol: 400 ppm TWA; 980 mg/m³ TWA Acetaldehyde: 100 ppm TWA; 180 mg/m³ TWA Acetone: 750 ppm TWA; 1800 mg/m³ TWA Benzene: 10 ppm TWA (unless specified in 1910.1028)

**Personal Protective Equipment**

**Eyes:** 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:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

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**Section 9 - Physical and Chemical Properties**

**Physical State:** Liquid

**Appearance:** clear, colorless

**Odor:** aromatic odor

**pH:** No data

**Vapor Pressure:** 43.9 mm Hg @ 20 deg C

**Vapor Density:** 1.6 (ethanol)

**Evaporation Rate:** 2.0

**Viscosity:** Not available.

**Boiling Point:** 173.3 deg F

**Freezing/Melting Point:** -90 deg C

**Decomposition Temperature:** Not available.

**Solubility:** Soluble in water.

**Specific Gravity/Density:** 0.7905

**Molecular Formula:** Mixture.

**Molecular Weight:** Not available.

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**Section 10 - Stability and Reactivity**

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

**Conditions to Avoid:** This material may be sensitive to peroxide formation., incompatible
Incompatibilities with Other Materials: Isopropanol is susceptible to autoxidation and therefore should be classified as peroxidizable., acids (mineral, non-oxidizing, e.g. hydrochloric acid, hydrofluoric acid, muriatic acid, phosphoric acid), acids (mineral, oxidizing, e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), acids (organic, e.g. acetic acid, benzoic acid, formic acid, methanoic acid, oxalic acid), azo, diazo, and hydrazines (e.g. dimethyl hydrazine, hydrazine, methyl hydrazine), isocyanates (e.g. methyl isocyanate), metals (alkali and alkaline, e.g. cesium, potassium, sodium), nitrides (e.g. potassium nitride, sodium nitride), peroxides and hydroperoxides (organic, e.g. acetyl peroxide, benzoyl peroxide, butyl peroxide, methyl ethyl ketone peroxide), epoxides (e.g. butyl glycidyl ether), oxidizing agents (strong, e.g. bromine, hydrogen peroxide, nitrogen dioxide, potassium nitrate), reducing agents (strong, e.g. aluminum carbide, chlorosilane, hydrogen phosphide, lithium hydride), water reactive substances (e.g. acetic anhydride, alkyl aluminum chloride, calcium carbide, ethyl dichlorosilane).

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: 
CAS# 64-17-5: KQ6300000
CAS# 7732-18-5: ZC0110000
CAS# 67-56-1: PC1400000
CAS# 108-10-1: SA9275000
CAS# 141-78-6: AH5425000
CAS# 308082-09-9 unlisted.
CAS# 108-88-3: X5525000
CAS# 64742-89-8 unlisted.
CAS# 67-63-0: NT8050000
CAS# 75-07-0: AB1925000
CAS# 67-64-1: AL3150000
CAS# 71-43-2: CY1400000

LD50/LC50: 
CAS# 64-17-5:
Draize test, rabbit, eye: 500 mg Severe;
Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, mouse: LC50 = 39 gm/m3/4H;
Inhalation, rat: LC50 = 20000 ppm/10H;
Oral, mouse: LD50 = 3450 mg/kg;
Oral, rabbit: LD50 = 6300 mg/kg;
Oral, rat: LD50 = 7060 mg/kg;
Oral, rat: LD50 = 9000 mg/kg;
CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;
CAS# 67-56-1:
Draize test, rabbit, eye: 40 mg Moderate;
Draize test, rabbit, eye: 100 mg/24H Moderate;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, rabbit: LC50 = 81000 mg/m3/14H;
Inhalation, rat: LC50 = 64000 ppm/4H;
Oral, mouse: LD50 = 7300 mg/kg;
Oral, rabbit: LD50 = 14200 mg/kg;
Oral, rat: LD50 = 5600 mg/kg;
Skin, rabbit: LD50 = 15800 mg/kg;
CAS# 108-10-1:
Draize test, rabbit, eye: 40 mg Severe;
Draize test, rabbit, eye: 100 uL/24H Moderate;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, mouse: LC50 = 23300 mg/m3;
Inhalation, rat: LC50 = 100 gm/m3;
Oral, mouse: LD50 = 1900 mg/kg;
Oral, rat: LD50 = 2080 mg/kg;
CAS# 141-78-6:
Inhalation, mouse: LC50 = 45 gm/m3/2H;
Inhalation, rat: LC50 = 200 gm/m3;
Oral, mouse: LD50 = 4100 mg/kg;
Oral, rabbit: LD50 = 4935 mg/kg;
Oral, rat: LD50 = 5620 mg/kg;
Skin, rabbit: LD50 = >20 mL/kg;
CAS# 308082-09-9:
CAS# 108-88-3:
Draize test, rabbit, eye: 870 ug Mild;
Draize test, rabbit, eye: 2 mg/24H Severe;
Draize test, rabbit, skin: 435 mg Mild;
Draize test, rabbit, skin: 500 mg Moderate;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, mouse: LC50 = 400 ppm/24H;
Inhalation, rat: LC50 = 49 gm/m3/4H;
Oral, rat: LD50 = 636 mg/kg;
Skin, rabbit: LD50 = 14100 uL/kg;
CAS# 64742-89-8:
CAS# 67-63-0:
Draize test, rabbit, eye: 100 mg Severe;
Draize test, rabbit, eye: 10 mg Moderate;
Draize test, rabbit, eye: 100 mg/24H Moderate;
Draize test, rabbit, skin: 500 mg Mild;
Inhalation, mouse: LC50 = 53000 mg/m3;
Inhalation, rat: LC50 = 16000 ppm/8H;
Inhalation, rat: LC50 = 72600 mg/m3;
Oral, mouse: LD50 = 3600 mg/kg;
Oral, mouse: LD50 = 3600 mg/kg;
Oral, rabbit: LD50 = 6410 mg/kg;
Oral, rat: LD50 = 5045 mg/kg;
Oral, rat: LD50 = 5000 mg/kg;
Skin, rabbit: LD50 = 12800 mg/kg;
CAS# 75-07-0:
Draize test, rabbit, eye: 40 mg Severe;
Inhalation, mouse: LC50 = 23 gm/m3/4H;
Inhalation, mouse: LC50 = 20300 mg/m3/2H;
Inhalation, rat: LC50 = 13300 ppm/4H;
Inhalation, rat: LC50 = 25000 mg/m3;
Oral, mouse: LD50 = 900 mg/kg;
Oral, rat: LD50 = 661 mg/kg;
Oral, rat: LD50 = 1930 mg/kg;
Skin, rabbit: LD50 = 3540 mg/kg;
CAS# 67-64-1:
Dermal, guinea pig: LD50 = >9400 uL/kg;
Draize test, rabbit, eye: 20 mg Severe;
Draize test, rabbit, eye: 20 mg/24H Moderate;
Draize test, rabbit, eye: 10 uL Mild;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, mouse: LC50 = 44 gm/m3/4H;
Inhalation, rat: LC50 = 50100 mg/m3/8H;
Oral, mouse: LD50 = 3 gm/kg;
Oral, rabbit: LD50 = 5340 mg/kg;
Oral, rat: LD50 = 5800 mg/kg;
CAS# 71-43-2:
Dermal, guinea pig: LD50 = >9400 uL/kg;
Draize test, rabbit, eye: 88 mg Moderate;
Draize test, rabbit, eye: 2 mg/24H Severe;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, mouse: LC50 = 9980 ppm;
Inhalation, rat: LC50 = 10000 ppm/7H;
Oral, mouse: LD50 = 4700 mg/kg;
Oral, rat: LD50 = 930 mg/kg;
Skin, rabbit: LD50 = >9400 uL/kg;

**Carcinogenicity:**
CAS# 64-17-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. CAS# 7732-18-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. CAS# 67-56-1: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. CAS# 108-10-1: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. CAS# 141-78-6: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. CAS# 308082-09-9: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. CAS# 108-88-3:
**IARC:** IARC Group 3 - not classifiable CAS# 64742-89-8: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. CAS# 67-63-0:
**IARC:** IARC Group 3 - not classifiable CAS# 75-07-0:
**ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
**California:** carcinogen, initial date 4/1/88
**NIOSH:** potential occupational carcinogen
**NTP:** Suspect carcinogen
**OSHA:** Possible Select carcinogen
**IARC:** Group 2B carcinogen CAS# 67-64-1: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
CAS# 71-43-2:
**ACGIH:** A1 - Confirmed Human Carcinogen
**California:** carcinogen, initial date 2/27/87
**NIOSH:** potential occupational carcinogen
**NTP:** Known carcinogen
**OSHA:** Select carcinogen
**IARC:** Group 1 carcinogen

**Epidemiology:** No data available.
**Teratogenicity:** No data available.
**Reproductive Effects:** Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have been collectively termed the fetal alcohol syndrome. Among the characteristics of this syndrome are intrauterine and postnatal growth deficiency, a distinctive pattern of physical malformation, and behavioral/cognitive impairment such as fine motor dysfunction and mental retardation. Not all affected children have all of the features of the syndrome. This syndrome has been associated with alcoholic women who drank heavily and chronically during pregnancy
**Neurotoxicity:** No data available.
**Mutagenicity:** No data available.
**Other Studies:** No data available.

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**Section 12 - Ecological Information**
Ecotoxicity: Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C
CFish: Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified)Bacteria: Phytobacterium phosphereum: EC50 = 34900 mg/L; 5-30 min; Microtox test 250 ppm/6hr/goldfish/lethal/fresh water
Environmental: Ethanol: In water, will volatilize and probably degrade.
Physical: No information available.
Other: Not expected to bioconcentrate in fish.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as 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 hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>Shipping Name: ETHANOL</th>
<th>IATA</th>
<th>RID/ADR</th>
<th>IMO</th>
<th>Canada TDG</th>
</tr>
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<tbody>
<tr>
<td>Hazard Class: 3</td>
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<td></td>
<td></td>
<td>ALCOHOLS FLAMMABLE TOXIC NOS (ETHANOL,METHANOL MIXTURE)</td>
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<tr>
<td>UN Number: UN11970</td>
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<td></td>
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<td>3(6.1)</td>
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<td>Packing Group: II</td>
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<td></td>
<td></td>
<td>UN1986</td>
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<td>Additional Info:</td>
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<td></td>
<td></td>
<td>II</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FP 18C</td>
</tr>
</tbody>
</table>

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 64-17-5 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.
CAS# 67-56-1 is listed on the TSCA inventory.
CAS# 108-10-1 is listed on the TSCA inventory.
CAS# 141-78-6 is listed on the TSCA inventory.
CAS# 308082-09-9 is not listed on the TSCA inventory. It is for research and development use only.
CAS# 108-88-3 is listed on the TSCA inventory.
CAS# 64742-89-8 is listed on the TSCA inventory.
CAS# 67-63-0 is listed on the TSCA inventory.
CAS# 75-07-0 is listed on the TSCA inventory.
CAS# 67-64-1 is listed on the TSCA inventory.
CAS# 71-43-2 is listed on the TSCA inventory.

**Health & Safety Reporting List**

**Chemical Test Rules**
None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**
CAS# 108-10-1: Present

**TSCA Significant New Use Rule**
None of the chemicals in this material have a SNUR under TSCA.

**SARA**

**CERCLA Hazardous Substances and corresponding RQs**
CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ CAS# 108-10-1: 5000 lb final RQ; 2270 kg final RQ CAS# 141-78-6: 5000 lb final RQ; 2270 kg final RQ CAS# 108-88-3: 1000 lb final RQ; 454 kg final RQ CAS# 75-07-0: 1000 lb final RQ; 454 kg final RQ CAS# 67-64-1: 5000 lb final RQ; 2270 kg final RQ CAS# 71-43-2: 10 lb final RQ (receives an adjustable RQ of 10 lbs based on potential carc

**SARA Section 302 Extremely Hazardous Substances**
None of the chemicals in this product have a TPQ.

**SARA Codes**

**Section 313**
This material contains Methyl alcohol (CAS# 67-56-1, 3 6%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373. This material contains Methyl isobutyl ketone (CAS# 108-10-1, 1 9%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373. This chemical is not at a high enough concentration to be reportable under Section 313. This chemical is not at a high enough concentration to be reportable under Section 313. This material contains Acetaldehyde (CAS# 75-07-0, 001%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373. This chemical is not at a high enough concentration to be reportable under Section 313.

**Clean Air Act:**
CAS# 67-56-1 is listed as a hazardous air pollutant (HAP). CAS# 108-10-1 is listed as a hazardous air pollutant (HAP). CAS# 108-88-3 is listed as a hazardous air pollutant (HAP). CAS# 75-07-0 is listed as a hazardous air pollutant (HAP). CAS# 71-43-2 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

**Clean Water Act:**
CAS# 108-88-3 is listed as a Hazardous Substance under the CWA. CAS# 75-07-0 is listed as a Hazardous Substance under the CWA. CAS# 71-43-2 is listed as a Hazardous Substance under the CWA. CAS# 108-88-3 is listed as a Priority Pollutant under the Clean Water Act. CAS# 71-43-2 is listed as a Priority Pollutant under the Clean Water Act. CAS# 108-88-3 is listed as a Toxic Pollutant under the Clean Water Act. CAS# 71-43-2 is listed as a Toxic Pollutant under the Clean Water Act.

**OSHA:**
None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**
CAS# 64-17-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 67-56-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 108-10-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 141-78-6 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 308082-09-9 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 108-88-3 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 64742-89-8 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 67-63-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 75-07-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 67-64-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 71-43-2 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
WARNING: This product contains Acetaldehyde, a chemical known to the state of California to cause cancer. WARNING: This product contains Benzene, a chemical known to the state of California to cause cancer. WARNING: This product contains Benzene, a chemical known to the state of California to cause birth defects or other reproductive harm. California No Significant Risk Level: CAS# 75-07-0: 90 æg/day NSRL (inhalation) CAS# 71-43-2: 7 æg/day NSRL

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**

F

**Risk Phrases:**

R 11 Highly flammable.

**Safety Phrases:**

S 16 Keep away from sources of ignition - No smoking.
S 2 Keep out of reach of children.
S 7 Keep container tightly closed.

**WGK (Water Danger/Protection)**

CAS# 64-17-5: 0
CAS# 7732-18-5: No information available.
CAS# 67-56-1: 1
CAS# 108-10-1: 1
CAS# 141-78-6: 1
CAS# 308082-09-9: No information available.
CAS# 108-88-3: 2
CAS# 64742-89-8: No information available.
CAS# 67-63-0: 1
CAS# 75-07-0: 1
CAS# 67-64-1: 0
CAS# 71-43-2: 3

**Canada - DSL/NDSL**

CAS# 64-17-5 is listed on Canada's DSL List.
CAS# 7732-18-5 is listed on Canada's DSL List.
CAS# 67-56-1 is listed on Canada's DSL List.
CAS# 108-10-1 is listed on Canada's DSL List.
CAS# 141-78-6 is listed on Canada's DSL List.
CAS# 108-88-3 is listed on Canada's DSL List.
CAS# 64742-89-8 is listed on Canada's DSL List.
CAS# 67-63-0 is listed on Canada's DSL List.
CAS# 75-07-0 is listed on Canada's DSL List.
CAS# 67-64-1 is listed on Canada's DSL List.
CAS# 71-43-2 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of B2, D1A, D2B.

Canadian Ingredient Disclosure List
CAS# 64-17-5 is listed on the Canadian Ingredient Disclosure List.
CAS# 67-56-1 is listed on the Canadian Ingredient Disclosure List.
CAS# 108-10-1 is listed on the Canadian Ingredient Disclosure List.
CAS# 141-78-6 is listed on the Canadian Ingredient Disclosure List.
CAS# 108-88-3 is listed on the Canadian Ingredient Disclosure List.
CAS# 67-63-0 is listed on the Canadian Ingredient Disclosure List.
CAS# 75-07-0 is listed on the Canadian Ingredient Disclosure List.
CAS# 67-64-1 is listed on the Canadian Ingredient Disclosure List.
CAS# 71-43-2 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits
CAS# 64-17-5: OEL-AUSTRALIA:TWA 1000 ppm (1900 mg/m3) OEL-BELGIUM:TWA 1000 ppm (1880 mg/m3) OEL-CZECHOSLOVAKIA:TWA 1000 ppm (1900 mg/m3) STEL 5000 mg/m3 OEL-DENMARK:TWA 1000 ppm (1900 mg/m3) OEL-FINLAND:TWA 1000 ppm (1900 mg/m3) STEL 1250 ppm (2400 mg/m3) OEL-FRANCE:TWA 1000 ppm (1900 mg/m3) STEL 5000 ppm OEL-GERMANY:TWA 1000 ppm (1900 mg/m3) OEL-HUNGARY:TWA 1000 ppm (1900 mg/m3) STEL 3000 mg/m3 OEL-THE NETHERLANDS:TWA 1000 ppm (1900 mg/m3) OEL-THE PHILIPPINES:TWA 1000 ppm (1900 mg/m3) OEL-POLAND:TWA 1000 mg/m3 OEL-RUSSIA:STEL 1000 mg/m3 OEL-SWEDEN:TWA 1000 ppm (1900 mg/m3) OEL-SWITZERLAND:TWA 1000 ppm (1900 mg/m3) OEL-THAILAND:TWA 1000 ppm (1900 mg/m3) OEL-TURKEY:TWA 1000 ppm (1900 mg/m3) OEL-UNITED KINGDOM:TWA 1000 ppm (1900 mg/m3) J:OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM
M check ACGIH TLV
CAS# 67-56-1: OEL-ARAB Republic of Egypt:TWA 200 ppm (260 mg/m3); Skin OEL-AUSTRALIA:TWA 200 ppm (260 mg/m3); STEL 250 ppm; Skin OEL-BELGIUM:TWA 200 ppm (260 mg/m3); STEL 250 ppm; Skin OEL-CZECHOSLOVAKIA:TWA 1000 ppm (260 mg/m3); STEL 500 ppm; OEL-DENMARK:TWA 200 ppm (260 mg/m3); Skin OEL-FINLAND:TWA 200 ppm (260 mg/m3); STEL 250 ppm; Skin OEL-FRANCE:TWA 200 ppm (260 mg/m3); STEL 1000 ppm (1300 mg/m3) OEL-GERMANY:TWA 200 ppm (260 mg/m3) STEL 1000 ppm (1300 mg/m3) OEL-HUNGARY:TWA 50 mg/m3; STEL 100 mg/m3; Skin JAN9 OEL-JAPAN:TWA 200 ppm (260 mg/m3); Skin OEL-THE NETHERLANDS:TWA 200 ppm (260 mg/m3); Skin OEL-THE PHILIPPINES:TWA 200 ppm (260 mg/m3) OEL-POLAND:TWA 100 mg/m3 OEL-RUSSIA:TWA 200 ppm; STEL 5 mg/m3; Skin OEL-SWEDEN:TWA 200 ppm (250 mg/m3); STEL 250 ppm (350 mg/m3); Skin OEL-SWITZERLAND:TWA 200 ppm (260 mg/m3); STEL 400 ppm; Skin OEL-THAILAND:TWA 200 ppm (260 mg/m3) OEL-TURKEY:TWA 200 ppm (260 mg/m3) OEL-UNITED KINGDOM:TWA 200 ppm (260 mg/m3); STEL 250 ppm; Skin OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGIH TLV
CAS# 141-78-6: OEL-AUSTRALIA:TWA 400 ppm (1400 mg/m3) OEL-BELGIUM:TWA 400 ppm (1440 mg/m3) OEL-CZECHOSLOVAKIA:TWA 400 mg/m3; STEL 2000 mg/m3 OEL-DENMARK:TWA 300 ppm (1100 mg/m3) OEL-FINLAND:TWA 300 ppm (1100 mg/m3) OEL-FRANCE:TWA 400 ppm (1400 mg/m3) OEL-GERMANY:TWA 400 ppm (1400 mg/m3) OEL-HUNGARY:TWA 400 mg/m3; STEL 1200 mg/m3 OEL-JAPAN:TWA 400 ppm (1400 mg/m3) OEL-THE NETHERLANDS:TWA 400 ppm (1400 mg/m3) JAN9 OEL-THE PHILIPPINES:TWA 400 ppm (1400 mg/m3); JAN9 OEL-POLAND:TWA 200 ppm OEL-RUSSIA:TWA 400 ppm; STEL 200 mg/m3 OEL-SWEDEN:TWA 150 ppm (500 mg/m3); STEL 300 ppm (1100 mg/m3) OEL...
L-SWITZERLAND:TWA 400 ppm (1400 mg/m³); STEL 800 ppm OEL-TURKEY:TWA 400 ppm (1400 mg/m³) OEL-UNITED KINGDOM:TWA 400 ppm (1400 mg/m³) OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

CAS# 108-88-3: OEL-AUSTRALIA:TWA 100 ppm (375 mg/m³); STEL 150 ppm (560 mg/m³) OEL-BELGIUM:TWA 100 ppm (377 mg/m³); STEL 150 ppm (565 mg/m³) OEL-CZECHOSLOVAKIA:TWA 200 mg/m³; STEL 1000 mg/m³ OEL-EN DENMARK:TWA 500 ppm (190 mg/m³); STEL 1000 ppm (375 mg/m³); OEL-FINLAND:TWA 100 ppm (375 mg/m³); STEL 150 ppm (560 mg/m³) OEL-GERMANY:TWA 100 ppm (380 mg/m³) OEL-HUNGARY:TWA 100 mg/m³; STEL 100 ppm (380 mg/m³) OEL-THE NETHERLANDS:TWA 100 ppm (375 mg/m³); STEL 150 ppm (380 mg/m³) OEL-POLAND:TWA 100 mg/m³; STEL 50 mg/m³ OEL-SWITZERLAND:TWA 100 ppm (380 mg/m³); STEL 500 ppm OEL-THAILAND:TWA 200 ppm; STEL 300 ppm OEL-TURKEY:TWA 200 ppm (750 mg/m³) OEL-UNITED KINGDOM:TWA 100 ppm (375 mg/m³); STEL 150 ppm; STEL 100 ppm; OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

CAS# 67-63-0: OEL-AUSTRALIA:TWA 400 ppm (980 mg/m³); STEL 500 ppm (12 1/2 mg/m³) OEL-BELGIUM:TWA 400 ppm (985 mg/m³); STEL 500 ppm (1230 mg/m³) OEL-EN DENMARK:TWA 200 ppm (490 mg/m³); STEL 400 ppm (980 mg/m³) OEL-GERMANY:TWA 400 ppm (980 mg/m³) OEL-JAPAN: STEL 400 ppm (980 mg/m³) OEL-THE NETHERLANDS:TWA 400 ppm (980 mg/m³); STEL 100 ppm (980 mg/m³) OEL-SWITZERLAND:TWA 100 ppm (980 mg/m³); STEL 800 ppm OEL-TURKEY:TWA 200 ppm (500 mg/m³) OEL-UNITED KINGDOM:TWA 400 ppm (980 mg/m³); STEL 500 ppm; STEL 100 ppm; OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

CAS# 75-07-0: OEL-ARAB Republic of Egypt:TWA 100 ppm (180 mg/m³) OEL-AUSTRALIA:TWA 100 ppm (180 mg/m³); STEL 150 ppm (270 mg/m³) OEL-BELGIUM:TWA 100 ppm (180 mg/m³); STEL 150 ppm (270 mg/m³) OEL-CZECHOSLOVAKIA:TWA 200 mg/m³; STEL 400 mg/m³; CAR OEL-EN DENMARK:TWA 25 ppm (45 mg/m³) OEL-FINLAND:TWA 50 ppm (90 mg/m³); STEL 75 ppm (13 mg/m³) OEL-FRANCE:TWA 100 ppm (180 mg/m³) OEL-GERMANY:TWA 50 ppm (90 mg/m³); STEL 75 ppm (13 mg/m³); OEL-JAN9 OEL-HUNGARY:TWA 25 mg/m³; Carcinogen J99 OEL-INDIA:TWA 100 ppm (180 mg/m³); STEL 150 ppm (270 mg/m³) OEL-THE NETHERLANDS:TWA 100 ppm (180 mg/m³) OEL-THE PHILIPPINES:TWA 200 ppm (360 mg/m³) OEL-POLAND:TWA 5 mg/m³ OEL-RUSSIA: STEL 5 mg/m³; STEL 100 ppm (45 mg/m³) OEL-SWITZERLAND:TWA 500 ppm (90 mg/m³); STEL 100 ppm (45 mg/m³) OEL-TURKEY:TWA 200 ppm (360 mg/m³) OEL-UNITED KINGDOM:TWA 100 ppm (180 mg/m³); STEL 150 ppm OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

CAS# 67-64-1: OEL-AUSTRALIA:TWA 500 ppm (1185 mg/m³); STEL 1000 ppm OEL-AUSTRIA:TWA 750 ppm (1780 mg/m³) OEL-BELGIUM:TWA 750 ppm (1780 mg/m³); STEL 1000 ppm OEL-CZECHOSLOVAKIA:TWA 800 mg/m³; STEL 4000 mg/m³ OEL-EN DENMARK:TWA 250 ppm (600 mg/m³) OEL-FINLAND:TWA 500 ppm (1200 mg/m³); STEL 625 ppm (1500 mg/m³) OEL-FRANCE:TWA 750 ppm (1800 mg/m³) OEL-GERMANY:TWA 1000 ppm (2400 mg/m³) OEL-HUNGARY:TWA 600 mg/m³; STEL 120 mg/m³ OEL-INDIA:TWA 750 ppm (1780 mg/m³); STEL 1000 ppm (2375 mg/m³) OEL-JAPAN:TWA 200 ppm (470 mg/m³) OEL-THE NETHERLANDS:TWA 750 ppm (1780 mg/m³) OEL-THE PHILIPPINES:TWA 1000 ppm (2400 mg/m³) OEL-POLAND:TWA 200 mg/m³ OEL-RUSSIA:TWA 200 ppm; STEL 200 mg/m³ OEL-SWITZERLAND:TWA 250 ppm (600 mg/m³); STEL 500 ppm (1200 mg/m³) OEL-SWITZERLAND:TWA 250 ppm (600 mg/m³); STEL 500 ppm (1200 mg/m³)
A 750 ppm (1780 mg/m3) OEL-TURKEY:TWA 1000 ppm (2400 mg/m3) OEL-UNITED KINGDOM:TWA 750 ppm (1810 mg/m3); STEL 1250 ppm OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV
CAS# 71-43-2: OEL-AUSTRALIA:TWA 5 ppm (16 mg/m3); Carcinogen OEL-BELGIUM:TWA 10 ppm (32 mg/m3); Carcinogen JAN9 OEL-CZECHOSLOVAKIA:TWA 10 mg/m3; STEL 20 mg/m3 OEL-DENMARK:TWA 5 ppm (16 mg/m3); Skin; Carcinogen OEL-FINLAND:TWA 5 ppm (15 mg/m3); STEL 10 ppm (30 mg/m3); Skin; CAR OEL-FRANCE:TWA 5 ppm (16 mg/m3); Carcinogen OEL-GERMANY; Skin; Carcinogen OEL-HUNGARY: STEL 5 mg/m3; Skin; Carcinogen OEL-INDIA:TWA 10 ppm (30 mg/m3); Carcinogen OEL-JAPAN:TWA 10 ppm (32 mg/m3); STEL 25 ppm (80 mg/m3); CAR OEL-THE NETHERLANDS:TWA 10 ppm (30 mg/m3); Skin OEL-THE PHILIPPINES:TWA 25 ppm (80 mg/m3); Skin OEL-POLAND:TWA 30 mg/m3; Skin OEL-RUSSIA:TWA 10 ppm (5 mg/m3); STEL 25 ppm (15 mg/m3); Skin; CAR OEL-SWEDEN:TWA 1 ppm (3 mg/m3); STEL 5 ppm (16 mg/m3); Skin; CAR OEL-SWITZERLAND:TWA 5 ppm (16 mg/m3); Skin; Carcinogen OEL-TAIWAN:TWA 10 ppm (30 mg/m3); STEL 25 ppm (7 mg/m3) OEL-TURKEY:TWA 20 ppm (64 mg/m3); Skin OEL-UNITED KINGDOM:TWA 10 ppm (30 mg/m3) OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Additional Information

**MSDS Creation Date:** 10/12/1998  
**Revision #4 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 make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher 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, howsoever arising, even if Fisher has been advised of the possibility of such damages.