Material Safety Data Sheet
Acetic acid, III

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Acetic acid, III  
**Catalog Numbers:** 57059A, 57059B, 57082, 57082A  
**Synonyms:** None.  
**Company Identification:**  
- Fisher Diagnostics  
  Fisher Scientific Company, LLC  
  8365 Valley Pike  
  Middletown, VA 22645-0307

For information, call: 800-524-0294  
Emergency Number: 800-524-0294  
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>7732-18-5</td>
<td>Deionized water</td>
<td>&gt;99</td>
<td>231-791-2</td>
</tr>
<tr>
<td>64-19-7</td>
<td>Acetic acid</td>
<td>&lt;1</td>
<td>200-580-7</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: colorless liquid.  
**Caution!** May cause eye and skin irritation. May cause respiratory tract irritation.  
**Target Organs:** No data found.

**Potential Health Effects**  
**Eye:** May cause eye irritation.  
**Skin:** May cause mild skin irritation.  
**Ingestion:** Ingestion of large amounts may cause gastrointestinal irritation.  
**Inhalation:** Excessive inhalation may cause minor respiratory irritation.  
**Chronic:** Chronic exposure to acetic acid may cause erosion of dental enamel, bronchitis, eye irritation, darkening of the skin, and chronic inflammation of the respiratory tract. Acetic acid can cause occupational asthma. One case of a delayed asthmatic response to glacial acetic acid has been reported in a person with bronchial asthma. Skin sensitization to acetic acid is rare, but has occurred.

Section 4 - First Aid Measures

**Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.  
**Skin:** In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.  
**Ingestion:** 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:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.  
**Notes to Physician:** Treat symptomatically and supportively.

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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and/or toxic fumes.  
**Extinguishing Media:** Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.  
**Flash Point:** Not applicable.  
**Autoignition Temperature:** Not applicable.  
**Explosion Limits, Lower:** Not available.  
**Upper:** Not available.  
**NFPA Rating:** (estimated) Health: 1; Flammability: 0; Instability: 0

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. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

**Section 7 - Handling and Storage**

**Handling:** Wash thoroughly after handling. Wash hands before eating. Use with adequate ventilation. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

**Storage:** Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances.

**Section 8 - Exposure Controls, Personal Protection**

**Engineering Controls:** Good general ventilation should be sufficient to control airborne levels. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**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>Deionized water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Acetic acid</td>
<td>10 ppm TWA; 15 ppm STEL</td>
<td>10 ppm TWA; 25 mg/m³ TWA</td>
<td>10 ppm TWA; 25 mg/m³ TWA</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Deionized water: No OSHA Vacated PELs are listed for this chemical. Acetic acid: 10 ppm TWA; 25 mg/m³ TWA

**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. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Section 9 - Physical and Chemical Properties**

- **Physical State:** Liquid
- **Appearance:** Colorless
- **Odor:** Vinegar odor.
- **pH:** 3.1
- **Vapor Pressure:** Not available.
- **Vapor Density:** >1.0
- **Evaporation Rate:** Not available.
- **Viscosity:** Not available.
- **Boiling Point:** 100 deg C
- **Freezing/Melting Point:** >0 deg C
- **Decomposition Temperature:** Not available.
- **Solubility:** Complete in water.
- **Specific Gravity/Density:** 1 (Water=1)
- **Molecular Formula:** Solution
- **Molecular Weight:** Not available.

**Section 10 - Stability and Reactivity**

- **Chemical Stability:** Stable.
- **Conditions to Avoid:** Incompatible materials, excess heat.
- **Incompatibilities with Other Materials:** Acetic acid is incompatible with acetaldehyde, 2-aminoethanol, ammonium nitrate, bromine pentafluoride, chlorine trifluoride, chlorosulfonic acid, chromic acid, chromic anhydride + acetic anhydride, diallyl methyl carbazon + ozone, ethylene diamine, ethylene imine, hydrogen peroxide, nitric acid + acetone, oleum perchloric acid, permanganates, phosphorus isocyanate, phosphorus trichloride, potassium hydroxide, potassium-t-butoxide, sodium hydroxide, sodium peroxyde, and xylene. See NFPA Fire Protection Guide for specifics.
- **Hazardous Decomposition Products:** Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
- **Hazardous Polymerization:** Will not occur.

**Section 11 - Toxicological Information**

- **RTECS#:**
- **CAS# 7732-18-5:** ZC0110000
- **CAS# 64-19-7:** AF1225000
- **LD50/LC50:**
  - Oral, rat: LD50 = >90 mL/kg;
CAS# 64-19-7:
Draize test, rabbit, skin: 50 mg/24H Mild;
Inhalation, mouse: LC50 = 5620 ppm/1H;
Oral, rat: LD50 = 3310 mg/kg;
Skin, rabbit: LD50 = 1060 uL/kg;

Carcinogenicity:
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 64-19-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: No information found
Mutagenicity: No information found
Neurotoxicity: No information found

Section 12 - Ecological Information
No information available.

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.
RCRA U-Series: None listed.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>Shipping Name:</th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class:</td>
<td></td>
<td></td>
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<tr>
<td>UN Number:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packing Group:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 7732-18-5 is listed on the TSCA inventory.
CAS# 64-19-7 is listed on the TSCA inventory.

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

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

Section 12b
None of the chemicals are listed under TSCA Section 12b.

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

CERCLA Hazardous Substances and corresponding RQs
CAS# 64-19-7: 5000 lb final RQ; 2270 kg final RQ

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

SARA Codes
CAS # 64-19-7: immediate, delayed, fire.

Section 313
No chemicals are reportable under Section 313.

Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:
CAS# 64-19-7 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

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

STATE:
CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 64-19-7 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
Not available.
Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)
CAS# 7732-18-5: No information available.
CAS# 64-19-7: 1

Canada - DSL/NDSL
CAS# 7732-18-5 is listed on Canada's DSL List.
CAS# 64-19-7 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of D2B.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List
CAS# 64-19-7 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 7/22/1999
Revision #7 Date: 5/29/2003

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.

Material Safety Data Sheet
Acrylic resin in toluene

58161 - (KIT)
91156 - (individual)

Section 1 - Chemical Product and Company Identification

MSDS Name: Acrylic resin in toluene
Catalog Numbers: 57090A1, 57090B, 57091A
Synonyms: None.
Company Identification:
Fisher Diagnostics
Fisher Scientific Company, LLC
8365 Valley Pike
Middletown, VA 22645-0307

For information, call: 800-524-0294
Emergency Number: 800-524-0294
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>108-88-3</td>
<td>Toluene</td>
<td>&lt;81</td>
<td>203-625-9</td>
</tr>
<tr>
<td>Not available</td>
<td>Acrylic resin</td>
<td>&lt;19</td>
<td>unlisted</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: 40 deg F.

Warning! Flammable liquid and vapor. Causes eye, skin, and respiratory tract irritation. Breathing vapors may cause drowsiness and dizziness. May be absorbed through intact skin. Aspiration hazard if swallowed. Can enter lungs and cause damage. Possible risk of harm to the unborn child. May cause central nervous system depression.

Target Organs: Central nervous system, respiratory system, eyes, skin.

Potential Health Effects
Eye: Causes eye irritation. Vapors may cause eye irritation.
Skin: Causes skin irritation. May be absorbed through the skin. Repeated or prolonged exposure may cause drying and cracking of the skin. Not expected to cause an allergic skin reaction.
Ingestion: May cause effects similar to those for inhalation exposure. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. May cause central nervous system depression.
**Inhalation:** Causes respiratory tract irritation. Inhalation of high concentrations (>200 ppm) of toluene are clearly associated with CNS encephalopathy, headache, depression, lassitude (weakness, exhaustion), impaired coordination, transient memory loss, and impaired reaction time.

**Chronic:** Prolonged or repeated skin contact may cause defatting and dermatitis. Repeated exposure in combination with constant, loud noise can produce hearing loss and dizziness. Chronic hydrocarbon abuse (for example, sniffing glue or light hydrocarbons such as benzene) has been associated with irregular heart rhythms and potential cardiac arrest. Toluene abuse has been linked with kidney disease, as evidenced by blood, protein, & pus in the urine, accompanied by elevated serum creatinine, decreased urinary output, & metabolic & renal tubular acidosis. Although kidney toxicity has not been common in cases of occupational toluene exposure, there has been at least one report of renal toxicity following a 40-year occupational toluene exposure. Toluene does not cause the severe injury to the bone marrow that is characteristic of benzene poisoning. Intentional abuse of toluene vapors has been linked to damage of the brain, liver, kidney and to death. Repeated inhalation exposure of toluene to animals causes histological changes in the brain, degeneration of the heart tissue, and possible immune suppression.

### Section 4 - First Aid Measures

**Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

**Skin:** In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

**Ingestion:** Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:** Causes cardiac sensitization to endogenous catecholamines which may lead to cardiac arrhythmias. Do NOT use adrenergic agents such as epinephrine or pseudoephedrine.

### 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. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Flammable liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. This liquid floats on water and may travel to a source of ignition and spread fire. May accumulate static electricity.

**Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or appropriate foam. Solid streams of water may be ineffective and spread material.

**Flash Point:** 40e deg F (4.44 deg C)

**Autoignition Temperature:** 896 deg F (480.00 deg C)

**Explosion Limits, Lower:** 1.1

**Upper:** 7.1

**NFPA Rating:** (estimated) Health: 2; Flammability: 3; Instability: 0

### 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. Provide ventilation. Use only non-sparking tools and equipment. Control runoff and isolate discharged material for proper disposal. Use water spray to cool and disperse vapors and protect personnel.

### Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. 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. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Keep away from heat, sparks and flame. Avoid breathing vapor or mist.

**Storage:** Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Separate from oxidizing materials.

### Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Ventilation fans and other electrical service must be non-sparking and have an explosion-proof design.

**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>Toluene</td>
<td>50 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous route</td>
<td>100 ppm TWA; 375 mg/m3 TWA 500 ppm IDLH</td>
<td>200 ppm TWA; 300 ppm Ceiling</td>
</tr>
<tr>
<td>Acrylic resin</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Toluene: 100 ppm TWA; 375 mg/m3 TWA Acrylic resin: No OSHA Vacated PELs are listed for this chemical.

**Personal Protective Equipment**

**Eyes:** Wear chemical splash goggles.

**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. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: colorless
Odor: sweetish odor - pleasant odor
pH: Not available.
Vapor Pressure: 36.7 mm Hg @ 30°C
Vapor Density: 3.1 (Air=1)
Evaporation Rate: 2.4 (Butyl acetate=1)
Viscosity: 0.59 cP @ 20°C
Boiling Point: 232 deg F
Freezing/Melting Point: -139 deg F
Decomposition Temperature: Not available.
Solubility: Insoluble.
Specific Gravity/Density: 0.9 (Water=1)
Molecular Formula: Solution
Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Ignition sources, excess heat, confined spaces.
Incompatibilities with Other Materials: Strong oxidizing agents, nitric acid, sulfuric acid.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: 108-88-3: X55250000
LD50/LC50:
CAS# 108-88-3:
Dräize test, rabbit, eye: 870 ug Mild;
Dräize test, rabbit, eye: 2 mg/24H Severe;
Dräize test, rabbit, skin: 435 mg Mild;
Dräize test, rabbit, skin: 500 mg Moderate;
Dräize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, mouse: LC50 = 400 ppm/24H;
Inhalation, mouse: LC50 = 30000 mg/m3/2H;
Inhalation, mouse: LC50 = 19900 mg/m3/7H;
Inhalation, mouse: LC50 = 10000 mg/m3;
Inhalation, rat: LC50 = 49 gm/m3/4H;
Oral, rat: LD50 = 636 mg/kg;
Skin, rabbit: LD50 = 14100
Carcinogenicity: CAS# 108-88-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
Epidemiology: No information available.
Teratogenicity: In an epidemiologic study of toluene and pregnancy, occupational exposures to toluene were said to be associated with an increased incidence of renal, urinary, gastrointestinal, and cardiac anomalies. Fetotoxicity (reduced fetal weight), behavioural effects (effects on learning and memory) and hearing loss (in males) were observed in the offspring of rats exposed by inhalation to toluene, in the absence of maternal toxicity.
Reproductive Effects: Many reports of reproductive effects of toluene abuse or heavy occupational exposure are confounded by mixed solvent exposure or fetal alcohol syndrome. Women exposed to toluene in lab work had a 4.7-fold increased risk of spontaneous abortions.
Mutagenicity: No information available.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. Bluegill LC50=17 mg/L/24H Shrimp LC50=4.3 ppm/96H Fathead minnow LC50=36.2 mg/L/96H Sunfish (fresh water) TLm=1180 mg/L/96H
Environmental: From soil, substance evaporates and is microbially biodegraded. In water, substance volatilizes and biodegrades.
Physical: Photochemically produced hydroxyl radicals degrade substance.
Other: No information available.

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.
RCRA U-Series:
CAS# 108-88-3: waste number U220.

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**Section 14 - Transport Information**

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<th>Shipping Name:</th>
<th>Not regulated as a hazardous material</th>
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<tbody>
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<td>UN1294</td>
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<td>Packing Group:</td>
<td>II</td>
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<td>Additional Info:</td>
<td>FLASHPOINT 4C</td>
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</table>

**Section 15 - Regulatory Information**

**US FEDERAL**

TSCA
CAS# 108-88-3 is listed on the TSCA inventory.

Acrylic resin is not listed on the TSCA inventory. It is for research and development use only.

Health & Safety Reporting List

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

Section 12b
None of the chemicals are listed under TSCA Section 12b.

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

CERCLA Hazardous Substances and corresponding RQs
CAS# 108-88-3: 1000 lb final RQ; 454 kg final RQ

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

SARA Codes
CAS# 108-88-3: immediate, fire.

Section 313
This material contains Toluene (CAS# 108-88-3, <81%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:
CAS# 108-88-3 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# 108-88-3 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.

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

STATE
CAS# 108-88-3 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65
WARNING: This product contains Toluene, a chemical known to the state of California to cause developmental reproductive toxicity.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:
XN F

Risk Phrases:
R 11 Highly flammable.
R 38 Irritating to skin.
R 48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R 63 Possible risk of harm to the unborn child.
R 65 Harmful: may cause lung damage if swallowed.
R 67 Vapours may cause drowsiness and dizziness.

Safety Phrases:
S 36/37 Wear suitable protective clothing and gloves.
S 46 If swallowed, seek medical advice immediately and show this container or label.
S 62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

WGK (Water Danger/Protection)
CAS# 108-88-3: 2

Canada - DSL/NDSL
CAS# 108-88-3 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of B2, D2A, D2B. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**

CAS# 108-88-3 is listed on the Canadian Ingredient Disclosure List.

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**Section 16 - Additional Information**

MSDS Creation Date: 5/20/1999  
Revision #7 Date: 5/04/2005

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.

**Material Safety Data Sheet**  
**Eosin Y Solution, Intensified (BSI)**

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**Section 1 - Chemical Product and Company Identification**

**MSDS Name:** Eosin Y Solution, Intensified (BSI)  
**Catalog Numbers:** 23314630, 23314631, 56030, 57093, 57093A, 57093B  
**Synonyms:** None.  
**Company Identification:**  
- Fisher Diagnostics  
- Fisher Scientific Company, LLC  
- 8365 Valley Pike  
- Middletown, VA 22645-0307  
  
**For information, call:** 800-524-0294  
**Emergency Number:** 800-524-0294  
**For CHEMTREC assistance, call:** 800-424-9300  
**For International CHEMTREC assistance, call:** 703-527-3887

---

**Section 2 - Composition, Information on Ingredients**

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<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>51%</td>
<td>200-578-6</td>
</tr>
<tr>
<td>67-56-1</td>
<td>Methyl Alcohol</td>
<td>3%</td>
<td>200-659-6</td>
</tr>
<tr>
<td>64-19-7</td>
<td>Acetic Acid</td>
<td>&lt; 1%</td>
<td>200-580-7</td>
</tr>
<tr>
<td>108-10-1</td>
<td>4-Methyl-2-Pentanone</td>
<td>1%</td>
<td>203-550-1</td>
</tr>
<tr>
<td>17372-87-1</td>
<td>Eosin Y</td>
<td>&lt; 1%</td>
<td>241-409-6</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>Balance</td>
<td>231-791-2</td>
</tr>
</tbody>
</table>

---

**Section 3 - Hazards Identification**

**EMERGENCY OVERVIEW**

Appearance: red liquid. Flash Point: 16.66 deg C.  
**Warning!** Causes severe eye irritation. **Flammable liquid and vapor.** Causes respiratory tract irritation. This substance has caused adverse reproductive and fetal effects in humans. May cause central nervous system depression. May cause liver, kidney and heart damage. Causes moderate skin irritation.

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

**Potential Health Effects**

**Eye:** Causes severe eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.  
**Skin:** Causes moderate skin irritation. May be absorbed through the skin. May cause cyanosis of the extremities.  
**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. 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. Causes respiratory tract irritation. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation.  
**Chronic:** May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart damage.

---

**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.  
**Skin:** Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.  
**Ingestion:** Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give
General Information: Containers can build up pressure if exposed to heat and/or fire. 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. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

Flash Point: 16.66 deg C (61.99 deg F)
Autoignition Temperature: 363 deg C (685.40 deg F)
Explosion Limits, Lower: 3.3 vol %
Upper: 19.0 vol %
NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 0

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. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Wash hands before eating. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. 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. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Do not store near perchlorates, peroxides, chromic acid or nitric acid.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. 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; 3300 ppm IDLH</td>
<td>1000 ppm TWA; 1900 mg/m3 TWA</td>
</tr>
<tr>
<td>Methyl Alcohol</td>
<td>200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous route</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>Acetic Acid</td>
<td>10 ppm TWA; 15 ppm STEL</td>
<td>10 ppm TWA; 25 mg/m3 TWA 50 ppm IDLH</td>
<td>10 ppm TWA; 25 mg/m3 TWA</td>
</tr>
<tr>
<td>4-Methyl-2-Pentanone</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>Eosin Y</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Ethyl Alcohol: 1000 ppm TWA; 1900 mg/m3 TWA Methyl Alcohol: 200 ppm TWA; 260 mg/m3 TWA Acetic Acid: 10 ppm TWA; 25 mg/m3 TWA 4-Methyl-2-Pentanone: 50 ppm TWA; 205 mg/m3 TWA Eosin Y: No OSHA Vacated PELs are listed for this chemical. Water: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical splash goggles.
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. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: red
Odor: Characteristic alcohol odor.

pH: Not available.

Vapor Pressure: 38 mm Hg @ 19 deg C

Evaporation Rate: 2.3 (Butyl acetate=1)

Viscosity: Not available.

Boiling Point: 86 deg C

Freezing/Melting Point: Not available.

Decomposition Temperature: Not available.

Solubility: Miscible with water.

Specific Gravity/Density: 0.93 (Water=1)

Molecular Formula: Not applicable.

Molecular Weight: Not available.

---

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

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

Incompatibilities with Other Materials: Strong oxidizing agents, acids, alkali metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium ferrous butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, potassium dioxide.

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

Hazardous Polymerization: Has not been reported.

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Section 11 - Toxicological Information

RTECS#:
CAS# 64-17-5: KQ6300000
CAS# 67-56-1: PC1400000
CAS# 64-19-7: AF1225000
CAS# 108-10-1: SA9275000
CAS# 17372-87-1: LM5850000
CAS# 7732-18-5: ZC0110000

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 = 9000 mg/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# 64-19-7:
Draize test, rabbit, skin: 50 mg/24H Mild;
Inhalation, mouse: LC50 = 5620 ppm/1H;
Oral, rat: LD50 = 3310 mg/kg;
Skin, rabbit: LD50 = 1060 uL/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, mouse: LC50 = 23300 mg/m3;
Inhalation, rat: LC50 = 100 gm/m3;
Oral, mouse: LD50 = 1900 mg/kg;
Oral, mouse: LD50 = 2850 mg/kg;
Oral, rat: LD50 = 2080 mg/kg;
Oral, rat: LD50 = 4600 mg/kg;
CAS# 17372-87-1:
- Oral, mouse: LD50 = 2344 mg/kg;
- Oral, rat: LD50 = >90 mL/kg;

Carcinogenicity:
CAS# 64-17-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 67-56-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 64-19-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 108-10-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 17372-87-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the "fetal alcohol syndrome".

Teratogenicity: CAS# 64-17-5: Oral, Human - woman: TDLo = 41 gm/kg (female 41 week(s) after conception) Effects on Newborn - Apgar score (human only) and Effects on Newborn - other neonatal measures or effects and Effects on Newborn - drug dependence.

Reproductive Effects: CAS# 64-17-5: Intrauterine, Human - woman: TDLo = 200 mg/kg (female 5 day(s) pre-mating) Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated).


Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C Fish: Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified) Bacteria: Phytobacterium phosphoreum: EC50 = 34900 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 ground water, but no data on the rates of these processes could be found. Its fate in ground water is unknown. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.

Environmental: When released to the atmosphere it will photodegrade in hours (polluted urban atmosphere) to an estimated range of 4 to 6 days in less polluted areas. Rainout should be significant.

Physical: No information available.

Other: No information available.

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.
RCRA U-Series:
- CAS# 67-56-1: waste number U154 (Ignitable waste).
- CAS# 108-10-1: waste number U161 (Ignitable waste).

Section 14 - Transport Information

<table>
<thead>
<tr>
<th></th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Name:</td>
<td>FLAMMABLE LIQUIDS, N.O.S.</td>
<td>No information available.</td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>UN Number:</td>
<td>UN1993</td>
<td></td>
</tr>
<tr>
<td>Packing Group:</td>
<td>II</td>
<td></td>
</tr>
</tbody>
</table>

Section 15 - Regulatory Information

US FEDERAL

TSCA
- CAS# 64-17-5 is listed on the TSCA inventory.
- CAS# 67-56-1 is listed on the TSCA inventory.
- CAS# 64-19-7 is listed on the TSCA inventory.
- CAS# 108-10-1 is listed on the TSCA inventory.
- CAS# 17372-87-1 is listed on the TSCA inventory.
- CAS# 7732-18-5 is listed on the TSCA inventory.

Health & Safety Reporting List
CAS# 108-10-1: Effective 10/4/82, Sunset 10/4/92

Chemical Test Rules
CAS# 108-10-1: Test for Health Effects

Section 12b
CAS# 108-10-1: Section 4 (applies only to those companies that signed an Enforceable Consent Ag

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Final RQ (lb)</th>
<th>Final RQ (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1</td>
<td>5000</td>
<td>2270</td>
</tr>
<tr>
<td>64-19-7</td>
<td>5000</td>
<td>2270</td>
</tr>
<tr>
<td>108-10-1</td>
<td>5000</td>
<td>2270</td>
</tr>
</tbody>
</table>

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

- CAS# 64-17-5: immediate, delayed, fire.
- CAS# 67-56-1: immediate, fire.
- CAS# 64-19-7: immediate, delayed, fire.
- CAS# 108-10-1: immediate, delayed, fire, reactive.
- CAS# 17372-87-1: immediate.

Section 313

This material contains Methyl Alcohol (CAS# 67-56-1, 3%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

4-Methyl-2-Pentanone 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).

This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:
- CAS# 64-19-7 is listed as a Hazardous Substance under the CWA.
- None of the chemicals in this product are listed as Priority Pollutants under the CWA.
- None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

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# 67-56-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
- CAS# 64-19-7 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# 17372-87-1 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
- CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65
WARNING: This product contains Ethyl Alcohol, a chemical known to the state of California to cause developmental reproductive toxicity. California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:
- F
- R

Risk Phrases:
- R 11 Highly flammable.

Safety Phrases:
- S 16 Keep away from sources of ignition - No smoking.
- S 33 Take precautionary measures against static discharges.
- S 7 Keep container tightly closed.
- S 9 Keep container in a well-ventilated place.

WGK (Water Danger/Protection)

- CAS# 64-17-5: 0
- CAS# 67-56-1: 1
- CAS# 64-19-7: 1
- CAS# 108-10-1: 1
- CAS# 17372-87-1: 1
- CAS# 7732-18-5: No information available.

Canada - DSL/NDSL

- CAS# 64-17-5 is listed on Canada’s DSL List.
- CAS# 67-56-1 is listed on Canada’s DSL List.
- CAS# 64-19-7 is listed on Canada’s DSL List.
- CAS# 108-10-1 is listed on Canada’s DSL List.
- CAS# 17372-87-1 is listed on Canada’s DSL List.
- CAS# 7732-18-5 is listed on Canada’s DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D2A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

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# 64-19-7 is listed on the Canadian Ingredient Disclosure List.
- CAS# 108-10-1 is listed on the Canadian Ingredient Disclosure List.
Material Safety Data Sheet
Bluing Agent, 5X

Section 1 - Chemical Product and Company Identification

MSDS Name: Bluing Agent, 5X
Catalog Numbers: 57095A, 57095B
Synonyms: None.
Company Identification:
Fisher Diagnostics
Fisher Scientific Company, LLC
8365 Valley Pike
Middletown, VA 22645-0307

For information, call: 800-524-0294
Emergency Number: 800-524-0294
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>1336-21-6</td>
<td>Ammonium hydroxide</td>
<td>&lt;3.0</td>
<td>215-647-6</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>Balance</td>
<td>231-791-2</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid.

Warning! Causes respiratory tract irritation. Irritant. Causes eye and skin irritation. May cause digestive tract irritation.

Target Organs: None.

Potential Health Effects

Eye: Causes eye irritation. May cause chemical conjunctivitis.

Skin: Causes skin irritation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation: Causes respiratory tract irritation. Can produce delayed pulmonary edema.

Chronic: Effects may be delayed.

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.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician: Treat symptomatically and supportively.

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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and/or toxic fumes.

Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. Cool containers with flooding quantities of water until well after fire is out. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.
Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Provide ventilation.

Section 7 - Handling and Storage

Handling: Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Wash clothing before reuse.
Storage: 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: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

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>Ammonium hydroxide</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Ammonium hydroxide: No OSHA Vacated PELs are listed for this chemical. Water: No OSHA Vacated PELs are listed for this chemical.

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: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: colorless
Odor: ammonia-like
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: >1.0
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: > 100 deg C
Freezing/Melting Point: > 0 deg C
Decomposition Temperature: Not available.
Solubility: Soluble.
Specific Gravity/Density: >1.0
Molecular Formula: Solution
Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: Incompatible materials, excess heat.
Incompatibilities with Other Materials: Strong acids, strong bases.
Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide, ammonia.
Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

RTECS#: CAS# 1336-21-6: BQ6250000
CAS# 7732-18-5: ZC0110000
LD50/LC50:
CAS# 1336-21-6:
Draize test, rabbit, eye: 250 ug Severe;
Draize test, rabbit, eye: 44 ug Severe;
Oral, rat: LD50 = 350 mg/kg;
CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;

Carcinogenicity:
CAS# 1336-21-6: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Mutagenicity: No information available.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information
No information available.

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.
RCRA U-Series: None listed.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th></th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
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<tbody>
<tr>
<td>Shipping Name</td>
<td>Not regulated as a hazardous material</td>
<td>No information available.</td>
</tr>
<tr>
<td>Hazard Class</td>
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<tr>
<td>UN Number</td>
<td></td>
<td></td>
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<tr>
<td>Packing Group</td>
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</table>

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 1336-21-6 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

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

Section 12b
None of the chemicals are listed under TSCA Section 12b.

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

CERCLA Hazardous Substances and corresponding RQs
CAS# 1336-21-6: 1000 lb final RQ; 454 kg final RQ

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

SARA Codes
CAS# 1336-21-6: immediate, delayed.

Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depleters.
This material does not contain any Class 2 Ozone depleters.

Clean Water Act:
CAS# 1336-21-6 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

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

STATE
CAS# 1336-21-6 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.
CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives

Hazard Symbols:
- XI

Risk Phrases:
- R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

WGK (Water Danger/Protection)
- CAS# 1336-21-6: 2
- CAS# 7732-18-5: No information available.

Canada - DSL/NDSL
- CAS# 1336-21-6 is listed on Canada's DSL List.
- CAS# 7732-18-5 is listed on Canada's DSL List.

Canada - WHMIS
- This product has a WHMIS classification of D2B.
- This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List
- CAS# 1336-21-6 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 2/07/2000
Revision #5 Date: 10/03/2005

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.

Material Safety Data Sheet
Protocol Hematoxylin, 6.5

Section 1 - Chemical Product and Company Identification

MSDS Name: Protocol Hematoxylin, 6.5
Catalog Numbers: 57071A, 57071B
Synonyms: None.

Company Identification:
- Fisher Diagnostics
- Fisher Scientific Company, LLC
- 8365 Valley Pike
- Middletown, VA 22645-0307

For information, call: 800-524-0294
Emergency Number: 800-524-0294
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>107-21-1</td>
<td>Ethylene glycol</td>
<td>26</td>
<td>203-473-3</td>
</tr>
<tr>
<td>7784-31-8</td>
<td>Aluminum sulfate octadecahydrate</td>
<td>10</td>
<td>unlisted</td>
</tr>
<tr>
<td>64-19-7</td>
<td>Acetic Acid</td>
<td>3.5</td>
<td>200-580-7</td>
</tr>
<tr>
<td>517-28-2</td>
<td>Hematoxylin</td>
<td>&gt;1.0</td>
<td>208-237-3</td>
</tr>
<tr>
<td>7681-55-2</td>
<td>Sodium iodate</td>
<td>&lt;1</td>
<td>231-672-5</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Deionized Water</td>
<td>Balance</td>
<td>231-791-2</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: maroon liquid.

Warning! Harmful or fatal if swallowed. May cause respiratory and digestive tract irritation. May cause eye and skin irritation. May cause central nervous system depression. May cause liver and kidney damage. May cause reproductive and fetal effects.

Target Organs: Kidneys, central nervous system, liver.

Potential Health Effects
Eye: May cause eye irritation.
Skin: May cause skin irritation.

Ingestion: Harmful if swallowed. May cause irritation of the digestive tract. 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. Ingestion produces toxicity that follows a three step progression. Stage one involves the central nervous system, including paralysis of...
the eye muscles, convulsions and coma. Metabolic acidosis and cerebral swelling may also occur. In the second stage, cardiopulmonary symptoms appear. These are characterized by hypertension, rapid heart beat and possible cardiac failure. In the third stage there is kidney damage.

**Inhalation:** High vapor concentrations may cause drowsiness. May cause respiratory tract irritation. If ethylene glycol is heated or misted in work areas that are poorly ventilated, vapor/mist may accumulate and cause respiratory irritation and symptoms such as headache and nausea. 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.

**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:** Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

**Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**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.

**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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

**Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or chemical foam.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Explosion Limits, Upper:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 0; Instability: 0

**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. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section.

**Section 7 - Handling and Storage**

**Handling:** Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale.

**Storage:** 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:** Good general ventilation should be sufficient to control airborne levels.

**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>Ethylene glycol</td>
<td>100 mg/m3 Ceiling (aerosol only)</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Aluminum sulfate octadecahydrate</td>
<td>2 mg/m3 TWA (as Al) (listed under Aluminum, soluble salts)</td>
<td>2 mg/m3 TWA (as Al) (listed under Aluminum, soluble salts)</td>
<td>none listed</td>
</tr>
<tr>
<td>Acetic Acid</td>
<td>10 ppm TWA; 15 ppm STEL</td>
<td>10 ppm TWA; 25 mg/m3 TWA 50 ppm IDLH</td>
<td>10 ppm TWA; 25 mg/m3 TWA</td>
</tr>
<tr>
<td>Hematoxylin</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Sodium iodate</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Deionized Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Ethylene glycol: No OSHA Vacated PELs are listed for this chemical. Aluminum sulfate octadecahydrate: No OSHA Vacated PELs are listed for this chemical. Acetic Acid: 10 ppm TWA; 25 mg/m3 TWA Hematoxylin: No OSHA Vacated PELs are listed for this chemical. Sodium iodate: No OSHA Vacated PELs are listed for this chemical. Deionized Water: No OSHA Vacated PELs are listed for this chemical.

**Personal Protective Equipment**

**Eyes:** Wear chemical splash goggles.

**Skin:** Wear appropriate gloves to prevent skin exposure.

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

**Respirators:** If 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.
Physical State: Liquid
Appearance: maroon
Odor: Mild odor
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 100 deg C
Freezing/Melting Point: Not available.
Decomposition Temperature: Not available.
Solubility: Soluble in water.
Specific Gravity/Density: ~1
Molecular Formula: Not available.
Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials.
Incompatibilities with Other Materials: Ethylene glycol is incompatible with dimethyl terephthalate + titanium butoxide, oxidants, phosphorus pentasulfide, silver copper wire, sodium hydroxide, chlorosulfonic acid, oleum, and sulfuric acid. Acetic acid is incompatible with acetaldehyde, acetic anhydride, 5-azidotetrazole, oxidants, phosphorus trichloride, and potassium tert-butoxide. Sodium iodate is incompatible with metals, aluminum, arsenic, carbon, copper, hydrogen peroxide, metal sulfides, organic matter, potassium, phosphorus, and sulfur..
Hazardous Decomposition Products: Oxides of sulfur, oxides of carbon, oxides of iodine.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 107-21-1: KW2975000
CAS# 7784-31-8: WS5697000
CAS# 64-19-7: AF1225000
CAS# 517-28-2: MH7875000
CAS# 7681-55-2: NN1400000
CAS# 7732-18-5: ZC0110000
LD50/LC50:
CAS# 107-21-1:
    Draize test, rabbit, eye: 500 mg/24H Mild;
    Draize test, rabbit, eye: 100 mg/1H Mild;
    Draize test, rabbit, eye: 0.012 ppm/3D;
    Draize test, rabbit, eye: 1440 mg/6H Moderate;
    Oral, mouse: LD50 = 5500 mg/kg;
    Oral, rat: LD50 = 4700 mg/kg;
    Skin, rabbit: LD50 = 9530 uL/kg;

    CAS# 7784-31-8:
        Oral, mouse: LD50 = 980 mg/kg;
        Oral, rat: LD50 = 370 mg/kg;

    CAS# 64-19-7:
        Draize test, rabbit, skin: 50 mg/24H Mild;
        Inhalation, mouse: LC50 = 5620 ppm/1H;
        Oral, rat: LD50 = 3310 mg/kg;
        Skin, rabbit: LD50 = 1060 uL/kg;

    CAS# 517-28-2:

    CAS# 7681-55-2:
        Oral, mouse: LD50 = 505 mg/kg;

    CAS# 7732-18-5:
        Oral, rat: LD50 = >90 mL/kg;

Carcinogenicity:
CAS# 107-21-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7784-31-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 64-19-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 517-28-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7681-55-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Ethylene glycol has been shown to produce fetotoxicity in the embryos and fetuses of laboratory animals. Specific
developmental abnormalities include the craniofacial and musculoskeletal systems.

**Teratogenicity:** No data available.

**Reproductive Effects:** Ethylene glycol has been shown to produce reproductive effects in laboratory animals.

**Mutagenicity:** Ethylene glycol has been shown to produce DNA inhibition in laboratory animals

**Neurotoxicity:** No data available.

---

### Section 12 - Ecological Information

No information available.

### 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.

**RCRA U-Series:** None listed.

### Section 14 - Transport Information

<table>
<thead>
<tr>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shipping Name:</strong></td>
<td>Not regulated as a hazardous material</td>
</tr>
<tr>
<td><strong>Hazard Class:</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>UN Number:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Packing Group:</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Section 15 - Regulatory Information

#### US FEDERAL

**TSCA**
- CAS# 107-21-1 is listed on the TSCA inventory.
- CAS# 7784-31-8 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40 CFR 720.3(u)(2)).
- CAS# 64-19-7 is listed on the TSCA inventory.
- CAS# 517-28-2 is listed on the TSCA inventory.
- CAS# 7681-55-2 is listed on the TSCA inventory.
- CAS# 7732-18-5 is listed on the TSCA inventory.

**Health & Safety Reporting List**
None of the chemicals are on the Health & Safety Reporting List.

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

**Section 12b**
None of the chemicals are listed under TSCA Section 12b.

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

**CERCLA Hazardous Substances and corresponding RQs**
- CAS# 107-21-1: 5000 lb final RQ; 2270 kg final RQ
- CAS# 64-19-7: 5000 lb final RQ; 2270 kg final RQ

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

**SARA Codes**
- CAS# 107-21-1: immediate, delayed.
- CAS# 7784-31-8: immediate, delayed.
- CAS# 64-19-7: immediate, delayed, fire.
- CAS# 7681-55-2: immediate, fire.

**Section 313**
- This material contains Ethylene glycol (CAS# 107-21-1, 26%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**
- CAS# 107-21-1 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# 64-19-7 is listed as a Hazardous Substance under the CWA.
- None of the chemicals in this product are listed as Priority Pollutants under the CWA.
- None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

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

**STATE**
- CAS# 107-21-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
- CAS# 7784-31-8 can be found on the following state right to know lists: California, (listed as Aluminum, soluble salts), Pennsylvania,
California Prop 65

European/International Regulations
European Labeling in Accordance with EC Directives

Hazard Symbols:
- XN

Risk Phrases:
- R 22 Harmful if swallowed.
- R 36/37/38 Irritating to eyes, respiratory system and skin.
- R 41 Risk of serious damage to eyes.
- R 20 Harmful by inhalation.

Safety Phrases:

WGK (Water Danger/Protection)
- CAS# 107-21-1: 0
- CAS# 7784-31-8: No information available.
- CAS# 64-19-7: 1
- CAS# 517-28-2: 1
- CAS# 7681-55-2: 1
- CAS# 7732-18-5: No information available.

Canada - DSL/NDSL
- CAS# 107-21-1 is listed on Canada's DSL List.
- CAS# 64-19-7 is listed on Canada's DSL List.
- CAS# 517-28-2 is listed on Canada's DSL List.
- CAS# 7681-55-2 is listed on Canada's DSL List.
- CAS# 7732-18-5 is listed on Canada's DSL List.

Canada - WHMIS
- This product has a WHMIS classification of D2A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List
- CAS# 107-21-1 is listed on the Canadian Ingredient Disclosure List.
- CAS# 7784-31-8 is listed on the Canadian Ingredient Disclosure List.
- CAS# 64-19-7 is listed on the Canadian Ingredient Disclosure List.
- CAS# 517-28-2 is listed on the Canadian Ingredient Disclosure List.
- CAS# 7681-55-2 is listed on the Canadian Ingredient Disclosure List.
- CAS# 7732-18-5 is listed on the Canadian Ingredient Disclosure List.

Material Safety Data Sheet
Alcohol Blends

Section 16 - Additional Information

MSDS Creation Date: 9/02/1997
Revision #6 Date: 3/10/2004

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.

Section 1 - Chemical Product and Company Identification

MSDS Name: Alcohol Blends
Catalog Numbers: 23245702, 23245703, 23245704, 23245705, 245-702, 245-703, 245-704, 245-705, 25042, 25042-GA, 25042A
Synonyms: Ethyl hydrate; specially denatured alcohol; dehydrated alcohol.
Company Identification:
- Fisher Diagnostics
- Fisher Scientific Company, LLC
- 8365 Valley Pike
- Middletown, VA 22645-0307

For information, call: 800-524-0294
Emergency Number: 800-524-0294
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>63-90.25</td>
<td>200-578-6</td>
</tr>
<tr>
<td>67-56-1</td>
<td>Methyl alcohol</td>
<td>&lt; or = 5</td>
<td>200-659-6</td>
</tr>
<tr>
<td>67-63-0</td>
<td>Isopropyl alcohol</td>
<td>&lt; or = 5</td>
<td>200-661-7</td>
</tr>
</tbody>
</table>
Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: 55 deg C.

Danger! Poison! May be fatal or cause blindness if swallowed. Vapor harmful. Flammable liquid and vapor. May cause severe eye irritation and possible injury. This substance has caused adverse reproductive and fatal effects in humans. May cause respiratory tract irritation. May cause skin irritation. May cause central nervous system depression. May form explosive peroxides. May cause liver and kidney damage. Cannot be made non-poisonous.

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

Potential Health Effects

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

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

Ingestion: May be fatal or cause blindness if swallowed. May cause irritation of the digestive tract. 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: May cause respiratory tract irritation. May cause effects similar to those described for ingestion. May cause drowsiness, unconsciousness, and central nervous system depression.

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

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: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

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

Notes to Physician: Treat symptomatically and supportively.

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 can travel to a source of ignition and flash back. Use water spray to keep fire-exposed containers cool. 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. Vapors may form an explosive mixture with air. Containers may explode when heated.

Extinguishing Media: Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material. 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. For small fires, use carbon dioxide, dry chemical, dry sand, or alcohol-resistant foam. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: 55 deg C (131.00 deg F)

Autoignition Temperature: Not available.

Explosion Limits, Lower: 3.3

Upper: 19.0

NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 0

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. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use only in a well-ventilated area. 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. Do not ingest or inhale. 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 3300 ppm IDLH</td>
<td>1000 ppm TWA; 1900 mg/m3 TWA</td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous route</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>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>
</tr>
<tr>
<td>Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Ethyl alcohol: 1000 ppm TWA; 1900 mg/m3 TWA Methyl alcohol: 200 ppm TWA; 260 mg/m3 TWA Isopropyl alcohol: 400 ppm TWA; 980 mg/m3 TWA Water: No OSHA Vacated PELs are listed for this chemical.

**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. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

**Physical State:** Liquid

**Appearance:** Colorless

**Odor:** Alcoholic odor.

**pH:** Not available.

**Vapor Pressure:** 40 mm Hg @ 19 C

**Vapor Density:** 1.59 (Air=1)

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** 79 deg C

**Freezing/Melting Point:** Not available.

**Decomposition Temperature:** Not available.

**Solubility:** Soluble.

**Specific Gravity/Density:** Not available.

**Molecular Formula:** Not available.

**Molecular Weight:** Not available.

Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures. This material may be sensitive to peroxide formation.

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

**Incompatibilities with Other Materials:** 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), nitrates (e.g. potassium nitrate, sodium nitrate), 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. aluminum carbide, chlorosilane, hydrogen phosphide, lithium hydride), water reactive substances (e.g. acetyl anhydride, alkyl aluminum chloride, calcium carbide, ethyl dichlorosilane), Isopropanol is susceptible to autoxidation and therefore should be classified as peroxidizable., This material has been reported to be susceptible to autoxidation and therefore should be classified as peroxidizable., nitric acids and other strong oxidizing agents can cause explosive type reaction when mixed with ion exchange resins.

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide.

**Hazardous Polymerization:** Has not been reported.

Section 11 - Toxicological Information

**RTECS#:**

- **CAS# 64-17-5:** KQ6300000
- **CAS# 67-56-1:** PC1400000
- **CAS# 67-63-0:** NT8050000
- **CAS# 7732-18-5:** ZC0110000

**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# 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# 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# 7732-18-5:
- Oral, rat: LD50 = >90 mL/kg;

Carcinogenicity:
CAS# 67-56-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 67-63-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Prenatal exposure to ethanol has been associated with a distinct pattern of congenital malformations that have been collectively termed the "fetal alcohol syndrome". Among the characteristics of this syndrome are postnatal growth deficiency and physical malformations.

Teratogenicity: No data available.

Reproductive Effects: Methanol has been shown to produce reproductive effects in laboratory animals.

Mutagenicity: Methanol has been shown to produce DNA damage in laboratory animals.

Neurotoxicity: No data available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: Ethanol: In water, it 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.
RCRA U-Series:
CAS# 67-56-1: waste number U154 (Ignitable waste).

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Name:</td>
<td>Not regulated as a hazardous material</td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>No information available.</td>
</tr>
<tr>
<td>UN Number:</td>
<td></td>
</tr>
<tr>
<td>Packing Group:</td>
<td></td>
</tr>
</tbody>
</table>

Section 15 - Regulatory Information
TSCA
CAS# 64-17-5 is listed on the TSCA inventory.
CAS# 67-56-1 is listed on the TSCA inventory.
CAS# 67-63-0 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.

Health & Safety Reporting List
CAS# 67-63-0: Effective 12/15/86, Sunset 12/15/96

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

Section 12b
None of the chemicals are listed under TSCA Section 12b.

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

CERCLA Hazardous Substances and corresponding RQs
CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

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

SARA Codes
CAS# 64-17-5: immediate, delayed, fire.
CAS# 67-56-1: immediate, fire.
CAS# 67-63-0: immediate, delayed, fire.

Section 313
This material contains Methyl alcohol (CAS# 67-56-1, < or = 5%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
This material contains Isopropyl alcohol (CAS# 67-63-0, < or = 5%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:
CAS# 67-56-1 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:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

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# 67-56-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 67-63-0 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.

California Prop 65
WARNING: This product contains Ethyl alcohol, a chemical known to the state of California to cause developmental reproductive toxicity.
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:
XN F

Risk Phrases:
R 10 Flammable.
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

Safety Phrases:
S 16 Keep away from sources of ignition - No smoking.
S 36/37 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).
S 7 Keep container tightly closed.

WGK (Water Danger/Protection)
CAS# 64-17-5: 0
CAS# 67-56-1: 1
CAS# 67-63-0: 1
CAS# 7732-18-5: No information available.

Canada - DSL/NDSL
CAS# 64-17-5 is listed on Canada’s DSL List.
CAS# 67-56-1 is listed on Canada’s DSL List.
CAS# 67-63-0 is listed on Canada’s DSL List.
CAS# 7732-18-5 is listed on Canada’s DSL List.

Canada - WHMIS
This product has a WHMIS classification of B2, D1B, D2A.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

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.
Section 16 - Additional Information

MSDS Creation Date: 4/08/1998
Revision #6 Date: 10/03/2005

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 the 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.

Material Safety Data Sheet
Absolute Alcohol

CAS# 67-56-1 is listed on the Canadian Ingredient Disclosure List.
CAS# 67-63-0 is listed on the Canadian Ingredient Disclosure List.

Section 1 - Chemical Product and Company Identification

MSDS Name: Absolute Alcohol
Catalog Numbers: 57039A, 57039B
Synonyms:
Company Identification:
Fisher Diagnostics
Fisher Scientific Company, LLC
8365 Valley Pike
Middletown, VA 22645-0307

For information, call: 800-524-0294
Emergency Number: 800-524-0294
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>90.25</td>
<td>200-578-6</td>
</tr>
<tr>
<td>67-56-1</td>
<td>Methyl alcohol</td>
<td>4.75</td>
<td>200-659-6</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>Balance</td>
<td>231-791-2</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: 55 deg F.

Danger! Poison! Flammable liquid and vapor. May be fatal or cause blindness if swallowed. Vapor harmful. May cause severe eye irritation and possible injury. May be absorbed through intact skin. May cause skin irritation. May cause respiratory tract irritation. May cause central nervous system depression. May cause liver and kidney damage. May cause reproductive and fetal effects. Cannot be made non-poisonous.

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 irritation and/or dermatitis. May be absorbed through the skin.

Ingestion: May be fatal or cause blindness if swallowed. May cause irritation of the digestive tract. 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: May cause visual impairment and possible permanent blindness. May cause effects similar to those described for ingestion. May cause drowsiness, unconsciousness, and central nervous system depression. Vapors may cause dizziness or suffocation.

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

Section 4 - First Aid Measures

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

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

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

Notes to Physician: Treat symptomatically and supportively.
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. Flammable liquid and vapor. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May be ignited by heat, sparks, and flame. Containers may explode when heated.

**Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

**Flash Point:** 55° deg F (12.78° deg C)

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:** 3.3

**Upper:** 19.0

**NFPA Rating:** (estimated) Health: 2; Flammability: 4; Instability: 0

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. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Use only in a well-ventilated area. 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. Do not ingest or inhale. 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>Methyl alcohol</td>
<td>200 ppm TWA; 250 ppm STEL; Skin + potential significant contribution to overall exposure by the cutaneous route</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>Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Ethyl alcohol: 1000 ppm TWA; 1900 mg/m3 TWA Methyl alcohol: 200 ppm TWA; 260 mg/m3 TWA Water: No OSHA Vacated PELs are listed for this chemical.

**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. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

**Physical State:** Liquid

**Appearance:** colorless

**Odor:** alcohol-like

**pH:** Not available.

**Vapor Pressure:** 40 mm Hg @19°C

**Vapor Density:** 1.59

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** 79 deg C

**Freezing/Melting Point:** Not available.

**Decomposition Temperature:** Not available.

**Solubility:** Soluble.

**Specific Gravity/Density:** 0.79

**Molecular Formula:** Not available.

**Molecular Weight:** Not available.
Section 10 - Stability and Reactivity

Chemical Stability: Stable.
Conditions to Avoid: Incompatible materials, ignition sources, excess heat.
Incompatibilities with Other Materials: 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), nitrates (e.g. potassium nitrate, sodium nitrite), 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# 67-56-1: PC1400000
CAS# 7732-18-5: ZC0110000
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# 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# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;

Carcinogenicity:
CAS# 64-17-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 67-56-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: 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 postnatal growth deficiency and physical malformations.

Teratogenicity: No data available.

Reproductive Effects: Methanol has been shown to produce reproductive effects in laboratory animals.

Mutagenicity: Methanol has been shown to produce DNA damage in laboratory animals.

Neurotoxicity: No data available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C; Fish: Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified); Bacteria: Phytobacterium phosphoreum: EC50 = 34900 mg/L; 5-30 min; Microtox test No data available.
Environmental: Degradation studies: Compound can be hydroxylated by Mortierella isabellina (Holland, H.L. J.Chem.Soc., Perkin Trans. 2 1990)
Physical: No information available.
Other: No information available.

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
Section 14 - Transport Information

<table>
<thead>
<tr>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Name:</td>
<td>Not regulated as a hazardous material</td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>No information available.</td>
</tr>
<tr>
<td>UN Number:</td>
<td></td>
</tr>
<tr>
<td>Packing Group:</td>
<td></td>
</tr>
</tbody>
</table>

Section 15 - Regulatory Information

**US FEDERAL**

**TSCA**
- CAS# 64-17-5 is listed on the TSCA inventory.
- CAS# 67-56-1 is listed on the TSCA inventory.
- CAS# 7732-18-5 is listed on the TSCA inventory.

**Health & Safety Reporting List**
None of the chemicals are on the Health & Safety Reporting List.

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

**Section 12b**
None of the chemicals are listed under TSCA Section 12b.

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

**CERCLA Hazardous Substances and corresponding RQs**
CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

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

**SARA Codes**
- CAS # 64-17-5: immediate, delayed, fire.
- CAS # 67-56-1: immediate, fire.

**Section 313**
This material contains Methyl alcohol (CAS# 67-56-1, 4.75%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**
- CAS# 67-56-1 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:**
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**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# 67-56-1 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.

**California Prop 65**
WARNING: This product contains Ethyl alcohol, a chemical known to the state of California to cause developmental reproductive toxicity. California No Significant Risk Level: None of the chemicals in this product are listed.

**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 33 Take precautionary measures against static discharges.
- S 9 Keep container in a well-ventilated place.

**WGK (Water Danger/Protection)**
- CAS# 64-17-5: 0
- CAS# 67-56-1: 1
- CAS# 7732-18-5: No information available.

**Canada - DSL/NDSL**
- CAS# 64-17-5 is listed on Canada's DSL List.
- CAS# 67-56-1 is listed on Canada’s DSL List.
CAS# 7732-18-5 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of B2, D2A.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

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.

Section 16 - Additional Information

MSDS Creation Date: 3/04/1998
Revision #4 Date: 10/03/2005

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.

Material Safety Data Sheet
Reagent Alcohol

Section 1 - Chemical Product and Company Identification

MSDS Name: Reagent Alcohol
Catalog Numbers:
85161 - (KIT)
88026 - (individual)

Company Identification:
Fisher Diagnostics
Fisher Scientific Company, LLC
8365 Valley Pike
Middletown, VA 22645-0307

For information, call: 800-524-0294
Emergency Number: 800-524-0294
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>Ethanol</td>
<td>63.0</td>
<td>200-578-6</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>30.0</td>
<td>231-791-2</td>
</tr>
<tr>
<td>67-56-1</td>
<td>Methyl alcohol</td>
<td>3.3-3.5</td>
<td>200-659-6</td>
</tr>
<tr>
<td>67-63-0</td>
<td>Isopropyl alcohol</td>
<td>3.3-3.5</td>
<td>200-661-7</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 70 deg F.

Warning! Causes severe eye irritation. Flammable liquid and vapor. Causes respiratory tract irritation. This substance has caused adverse reproductive and fetal effects in humans. May cause central nervous system depression. May cause liver, kidney and heart damage. Causes moderate skin irritation.

Target Organs: Kidneys, heart, central nervous system, liver, eyes, optic nerve.

Potential Health Effects
Eye: Causes severe eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage. Inhalation, ingestion or skin absorption of methanol can cause significant disturbances in vision, including blindness.
Skin: Causes moderate skin irritation. May cause cyanosis of the extremities. Methanol can be absorbed through the skin, producing systemic effects that include visual disturbances.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. 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: Causes respiratory tract irritation. Vapors may cause dizziness or suffocation. Methanol is toxic and can very readily form extremely high vapor concentrations at room temperature. Inhalation is the most common route of occupational exposure. At first, methanol causes CNS depression with nausea, headache, vomiting, dizziness and incoordination. A time period with no obvious symptoms follows (typically 8-24 hrs). This latent period is followed by metabolic acidosis and severe visual effects which may include reduced reactivity and/or increased sensitivity to light, blurred, double and/or snowy vision, and blindness. Depending on the severity of exposure and the promptness of treatment, survivors may recover completely or may have permanent blindness, vision disturbances and/or nervous system effects.
Chronic: May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart damage. Methanol is only very slowly eliminated from the body. Because of this slow elimination, methanol should be regarded as a cumulative poison. Though a single exposure may cause no effect, daily exposures may result in the accumulation of a harmful amount.
**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.

**Skin:** Get medical aid. Wash clothing before reuse. Flush skin with plenty of soap and water.

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

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

**Notes to Physician:** Treat symptomatically and supportively. Persons with skin or eye disorders or liver, kidney, chronic respiratory diseases, or central and peripheral nervous system diseases may be at increased risk from exposure to this substance.

**Antidote:** Replace fluid and electrolytes.

**Section 5 - Fire Fighting Measures**

**General Information:** Containers can build up pressure if exposed to heat and/or fire. 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. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire.

**Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

**Flash Point:** 70° deg F (21.11 deg C)

**Autoignition Temperature:** Not applicable.

**Exposure Limits, Lower:** None listed

**Upper:** 19.0 vol %

**NFPA Rating:** (estimated) Health: 2; Flammability: 3; Instability: 0

**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. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

**Section 7 - Handling and Storage**

**Handling:** Wash thoroughly after handling. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. 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. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Do not store near perchlorates, peroxides, chromic acid or nitric acid.

**Section 8 - Exposure Controls, Personal Protection**

**Engineering Controls:** Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. 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>Ethanol</td>
<td>1000 ppm TWA</td>
<td>1000 ppm TWA; 1900 mg/m3 TWA; 3300 ppm IDLH</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 significant contribution to overall exposure by the cutaneous route</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>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>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Ethanol: 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 Isopropyl alcohol: 400 ppm TWA; 980 mg/m3 TWA

**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:** A respiratory protection program that meets OSHA’s 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.
Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear, colorless
Odor: Alcoholic odor.
\( \text{pH} \): Not available.
Vapor Pressure: 40 mm Hg @ 19 deg C
Vapor Density: Not available.
Viscosity: Not available.
Boiling Point: 83 deg C
Freezing/Melting Point: Not available.
Solubility: Miscible.
Specific Gravity/Density: 0.9 (Water=1)
Molecular Formula: Not applicable.
Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, ignition sources, excess heat, oxidizers.
Incompatibilities with Other Materials: Strong oxidizing agents, acids, alkali metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentfluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, potassium dioxide.
Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, 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# 67-63-0: NT8050000
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# 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

Carcinogenicity:
CAS# 64-17-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 67-56-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 67-63-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the 'fetal alcohol syndrome'. Methanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Specific developmental abnormalities include cardiovascular, musculoskeletal, and urogenital systems.

Teratogenicity: Oral, Human - woman: TDLo = 41 gm/kg (female 41 week(s) after conception) Effects on Newborn - Apgar score (human only) and Effects on Newborn - other neonatal measures or effects and Effects on Newborn - drug dependence.

Reproductive Effects: Intrauterine, Human - woman: TDLo = 200 mg/kg (female 5 day(s) pre-mating) Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated).


Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC₅₀ = 12000-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C Fish: Rainbow trout: LC₅₀ = 11200 mg/L; 24 Hr; Fingerling (Unspecified) Bacteria: Phytobacterium phosphoreum: EC₅₀ = 34900 mg/L; 5-30 min; Microtox test. When spilled on land it is apt to volatilize, biodegrade, and leach into the ground water, but no data on the rates of these processes could be found. Its fate in ground water is unknown. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.

Environmental: When released to the atmosphere it will photodegrade in hours (polluted urban atmosphere) to an estimated range of 4 to 6 days in less polluted areas. Rainout should be significant.

Physical: No information available.
Other: No information available.

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:</th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHANOL</td>
<td>ETHANOL</td>
<td></td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>UN Number:</td>
<td>UN170</td>
<td>UN1170</td>
</tr>
<tr>
<td>Packing Group:</td>
<td>II</td>
<td>II</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# 67-63-0 is listed on the TSCA inventory.

Health & Safety Reporting List
CAS# 67-63-0: Effective 12/15/86, Sunset 12/15/96

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

Section 12b
None of the chemicals are listed under TSCA Section 12b.

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

CERCLA Hazardous Substances and corresponding RQs
CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

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

SARA Codes
CAS # 64-17-5: immediate, delayed, fire.
CAS # 67-56-1: immediate, fire.
CAS # 67-63-0: immediate, delayed, fire.

Section 313
This material contains Methyl alcohol (CAS# 67-56-1, 3.3-3.5%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
This material contains Isopropyl alcohol (CAS# 67-63-0, 3.3-3.5%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:
CAS# 67-56-1 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:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

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# 67-63-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65
WARNING: This product contains Ethanol, a chemical known to the state of California to cause developmental reproductive toxicity.
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
XN F
Risk Phrases:
R 11 Highly flammable.
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R 68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

Safety Phrases:
S 16 Keep away from sources of ignition - No smoking.
S 36/37 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).
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# 67-63-0: 1

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# 67-63-0 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of B2, D2A, D1B, D2B.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

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# 67-63-0 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 7/30/1999
Revision #8 Date: 10/17/2005

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, however arising, even if Fisher has been advised of the possibility of such damages.

Material Safety Data Sheet
50 % Reagent Alcohol, III

58161 - (KIT)
88220 - (individual)

Section 1 - Chemical Product and Company Identification

MSDS Name: 50 % Reagent Alcohol, III
Catalog Numbers: 57037A, 57037B
Catalog Numbers: 57037A, 57037B

Synonyms: Mixture

Company Identification:
Fisher Diagnostics
Fisher Scientific Company, LLC
8365 Valley Pike
Middletown, VA 22645-0307

For information, call: 800-524-0294
Emergency Number: 800-524-0294
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>Ethanol</td>
<td>47.5</td>
<td>200-578-6</td>
</tr>
<tr>
<td>67-56-1</td>
<td>Methyl alcohol</td>
<td>0.5</td>
<td>200-659-6</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>Balance</td>
<td>231-791-2</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: clear, colorless liquid. Flash Point: 16.66 deg C.

**Warning!** Causes severe eye irritation. **Flammable liquid and vapor.** Causes respiratory tract irritation. This substance has caused adverse reproductive and fetal effects in humans. May cause central nervous system depression. May cause liver, kidney and heart damage. Causes moderate skin irritation.

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

**Potential Health Effects**

**Eye:** Causes severe eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.

**Skin:** Causes moderate skin irritation. May cause cyanosis of the extremities.

**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. 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. Causes respiratory tract irritation. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation.

**Chronic:** May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart damage.

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.

**Skin:** Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

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

**Notes to Physician:** Treat symptomatically and supportively. Persons with skin or eye disorders or liver, kidney, chronic respiratory diseases, or central and peripheral nervous system diseases may be at increased risk from exposure to this substance.

Section 5 - Fire Fighting Measures

**General Information:** Containers can build up pressure if exposed to heat and/or fire. 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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire.

**Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

**Flash Point:** 16.66 deg C (61.99 deg F)

**Autoignition Temperature:** 363 deg C (685.40 deg F)

**Explosion Limits, Lower:** 3.3 vol %

**Upper:** 19.0 vol %

**NFPA Rating:** (Estimated) Health: 2; Flammability: 3; Instability: 0

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. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Handling: Wash thoroughly after handling. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. 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 pressureize, 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. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Do not store near perchlorates, peroxides, chromic acid or nitric acid.

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

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<thead>
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<td>200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous route</td>
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<td>200 ppm TWA; 260 mg/m3 TWA</td>
</tr>
<tr>
<td>Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Ethanol: 1000 ppm TWA; 1900 mg/m3 TWA Methyl alcohol: 200 ppm TWA; 260 mg/m3 TWA Water: No OSHA Vacated PELs are listed for this chemical.

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: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Physical State: Liquid

Appearance: Clear, colorless

Odor: Alcoholic odor.

pH: Not available.

Vapor Pressure: 40 mm Hg @ 19 deg C

Vapor Density: 1.59 (Air=1)

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 85 deg C

Freezing/Melting Point: Not available.

Decomposition Temperature: Not available.

Solubility: Miscible.

Specific Gravity/Density: 0.9 (Water=1)

Molecular Formula: Solution

Molecular Weight: Not available.

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, ignition sources, excess heat, oxidizers.

Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, acids, active metals, alkali metals, ammonia, hydrazine, nitric acid, peroxides, isocyanates, alliphatic amines, sodium, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), acid anhydrides, calcium hypochlorite, cyanuric chloride, chromyl chloride, nitrosyl perchlorate, diethyl zinc, bromine pentafluoride, perchloric acid, silver nitrate, chronic anhydride, mercury nitrate, phosphorus trioxide, potassium tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptfluoride, Oxidants (such as barium perchlorate, bromine, chlorine, hydrogen peroxide, lead perchlorate, perchloric acid, sulfuric acid, hydrochloric acid), acetyl bromide, alkyl aluminum salts, beryllium dihydrogen, carbon tetrachloride + metals, chloroform + heat, chloroform + sodium hydroxide, Attacks some forms of plastics, rubbers, and coatings., disulfuryl difluoride, tetrachlorosilane + water..

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

Hazardous Polymerization: Has not been reported.

Section 7 - Handling and Storage

Section 8 - Exposure Controls, Personal Protection

Section 9 - Physical and Chemical Properties

Section 10 - Stability and Reactivity

Section 11 - Toxicological Information
RTECS#
CAS# 64-17-5: KQ6300000
CAS# 67-56-1: PC1400000
CAS# 7732-18-5: ZC0110000
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 = 9000 mg/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# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;
Carcinogenicity:
CAS# 64-17-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 67-56-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
Epidemiology:
Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the "fetal alcohol syndrome." Methanol and phenol have been shown to produce fetotoxicity in the embryo or fetus in laboratory animals. Specific developmental abnormalities for methanol include the musculoskeletal, urogenital, and cardiovascular systems.
Teratogenicity: No information found
Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.
Mutagenicity: No information found
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

Ecotoxicity:
Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C
Fish: Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified)
Bacteria: Phytobacterium phosphoreum: EC50 = 34900 mg/L; 5-30 min; Microtox test
When spilled on land it is apt to volatilize, biodegrade, and leach into the ground water, but no data on the rates of these processes could be found. Its fate in ground water is unknown. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.
Physical:
No information available.
Other:
For more information, see "HANDBOOK OF ENVIRONMENTAL FATE AND EXPOSURE DATA."

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.
RCRA U-Series:
CAS# 67-56-1: waste number U154 (Ignitable waste).

Section 14 - Transport Information

<table>
<thead>
<tr>
<th></th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shipping Name:</strong></td>
<td>Not regulated as a hazardous material</td>
<td>No information available.</td>
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<tr>
<td><strong>Hazard Class:</strong></td>
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<tr>
<td><strong>UN Number:</strong></td>
<td></td>
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</tr>
<tr>
<td><strong>Packing Group:</strong></td>
<td></td>
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</tr>
</tbody>
</table>
US FEDERAL

TSCA
CAS# 64-17-5 is listed on the TSCA inventory.
CAS# 67-56-1 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

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

Section 12b
None of the chemicals are listed under TSCA Section 12b.

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

CERCLA Hazardous Substances and corresponding RQs
CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

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

SARA Codes
CAS# 64-17-5: immediate, delayed, fire.
CAS# 67-56-1: immediate, fire.

Section 313
Methyl alcohol is not at a high enough concentration to be reportable under Section 313. No chemicals are reportable under Section 313.

Clean Air Act:
CAS# 67-56-1 is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depleters.
This material does not contain any Class 2 Ozone depleters.

Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

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# 67-56-1 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.

California Prop 65
WARNING: This product contains Ethanol, a chemical known to the state of California to cause developmental reproductive toxicity.
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
T F
Risk Phrases:
R 11 Highly flammable.

Safety Phrases:
S 16 Keep away from sources of ignition - No smoking.
S 33 Take precautionary measures against static discharges.
S 7 Keep container tightly closed.
S 9 Keep container in a well-ventilated place.

WGK (Water Danger/Protection)
CAS# 64-17-5: 0
CAS# 67-56-1: 1
CAS# 7732-18-5: No information available.

Canada - DSL/NDSL
CAS# 64-17-5 is listed on Canada’s DSL List.
CAS# 67-56-1 is listed on Canada’s DSL List.
CAS# 7732-18-5 is listed on Canada’s DSL List.

Canada - WHMIS
This product has a WHMIS classification of B2, D2A.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

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.
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.