Material Safety Data Sheet
Reagent Alcohol (Denatured Ethanol)

Section 1 - Chemical Product and Company Identification

MSDS Name:
Reagent Alcohol (Denatured Ethanol)
Catalog Numbers:
LC22200
Synonyms:
None
Company Identification:
LabChem, Inc.
200 William Pitt Way
Pittsburgh, PA 15238
Company Phone Number:
(412) 826-5230
Emergency Phone Number:
(800) 424-9300
CHEMTREC Phone Number:
(800) 424-9300 or
011-703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name:</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5</td>
<td>Ethyl alcohol</td>
<td>90</td>
</tr>
<tr>
<td>67-56-1</td>
<td>Methyl alcohol</td>
<td>5</td>
</tr>
<tr>
<td>67-63-0</td>
<td>Isopropyl alcohol</td>
<td>5</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

Emergency Overview

**Appearance:** Clear, colorless solution

**Danger:** Flammable liquid. Poison. May be fatal or cause blindness if swallowed. Vapor harmful. Causes severe eye irritation. May cause skin, respiratory and digestive tract 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:**
Causes severe eye irritation.

**Skin:**
May cause skin irritation.

**Ingestion:**

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May cause irritation of the digestive tract with nausea, vomiting, and diarrhea. 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 possible coma and death.

**Inhalation:**
May cause respiratory irritation. Inhalation of high concentrations may cause central nervous system effects characterized by headache, dizziness, unconsciousness and coma.

**Chronic:**
Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. Prolonged or repeated skin contact may cause defatting and dermatitis. Denatured ethanol is associated with respiratory irritation, central nervous system depression, visual impairment, dermatitis, conjunctivitis, sensory and motor impairment.

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**Section 4 - First Aid Measures**

**Eyes:**
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until chemical is gone. Get medical aid at once.

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

**Ingestion:**
Do not induce vomiting. If vomiting occurs naturally, keep head lower than hips to prevent aspiration into lungs. Give conscious victim 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid at once.

**Inhalation:**
Move victim to fresh air immediately. If breathing is difficult, administer oxygen. Give artificial respiration if necessary. Get medical aid at once.

**Notes to Physician:**
Treat symptomatically and supportively. Medical personnel may remove the alcohol through gastric lavage with water or 3-5% sodium bicarbonate solution unless 2 hours or more have elapsed since ingestion.

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**Section 5 - Fire Fighting Measures**

**General Information:**
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back. Flammable liquid. Vapor-air mixtures are explosive at temperatures above the flashpoint. Containers can build up pressure if exposed to heat and/or fire. Use water spray to keep fire-exposed containers cool.

**Extinguishing Media:**
For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

**Autoignition Temperature:**
698°F (370°C)

**Flash Point:**
57°F (14°C)

**NFPA Rating:**
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Health- 1, Flammability- 3, Instability- 0

Explosion Limits:
Lower: 4.3  Upper: 19

Section 6 - Accidental Release Measures

General Information:
Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Remove all sources of ignition, and use spark-proof tools and equipment. Absorb spill with inert material such as sand, vermiculite, or diatomaceous earth, and transfer to a suitable container labeled for later disposal. Label reclaimed spill material as flammable.

Section 7 - Handling and Storage

Handling:
Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Take precautionary measures against static discharges. Keep away from heat, sparks, and flame. Empty containers retain product residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage:
Store tightly capped in a cool, dry, well-ventilated area away from incompatible materials.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:
Facilities using or storing this material should be equipped with an eyewash and safety shower. Provide local exhaust or general dilution ventilation to keep airborne levels below the permissible exposure limits.

Exposure Limits:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>1000 ppm TWA</td>
<td>1000 ppm TWA</td>
<td>1000 ppm TWA</td>
</tr>
<tr>
<td></td>
<td>1900 mg/m3 TWA</td>
<td>1900 mg/m3 TWA</td>
<td>1900 mg/m3 TWA</td>
</tr>
<tr>
<td></td>
<td>3300 ppm IDLH</td>
<td>3300 ppm IDLH</td>
<td>3300 ppm IDLH</td>
</tr>
<tr>
<td>Methanol</td>
<td>200 ppm TWA</td>
<td>200 ppm TWA</td>
<td>200 ppm TWA</td>
</tr>
<tr>
<td></td>
<td>250 ppm STEL</td>
<td>250 ppm STEL</td>
<td>260 mg/m3 TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6000 ppm IDLH</td>
<td>260 mg/m3 TWA</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>200 ppm TWA</td>
<td>400 ppm TWA</td>
<td>400 ppm TWA</td>
</tr>
<tr>
<td></td>
<td>500 ppm STEL</td>
<td>500 ppm STEL</td>
<td>980 mg/m3 TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2000 ppm IDLH</td>
<td>980 mg/m3 TWA</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

Personal Protective Equipment
Eyes:
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Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133. Do not wear contact lenses when working with chemicals.

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. Always use a NIOSH-approved respirator when necessary.

### Section 9 - Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Alcohol-like</td>
</tr>
<tr>
<td>pH</td>
<td>No information found.</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>40 mm Hg @20°C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>1.6</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information found.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information found.</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>172°F (78°C)</td>
</tr>
<tr>
<td>Freezing/Melting Point</td>
<td>-172°F (-113°C)</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No information found.</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Soluble.</td>
</tr>
<tr>
<td>Specific Gravity/Density</td>
<td>0.8</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>No information found.</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>No information found.</td>
</tr>
</tbody>
</table>

### Section 10 - Stability and Reactivity

Chemical Stability:
Stable under normal temperatures and pressures.

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

Incompatibilities with Other Materials:
Strong acids, halogenated organics, chromium compounds, silver nitrate, strong oxidizing agents, alkali metals.

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

Hazardous Polymerization:
Has not been reported

### Section 11 - Toxicological Information

RTECS:
CAS# 64-17-5: KQ6300000.
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CAS# 67-56-1: PC1400000.
CAS# 67-63-0: NT8050000.

LD50/LC50:
CAS# 64-17-5:
Inhalation, rat: LC50 = 20000 ppm/10H
Oral, rat: LD50 = 7060 mg/kg
CAS# 67-56-1:
Inhalation, rat: LC50 = 64000 ppm/4H
Oral, rat: LD50 = 5600 mg/kg
Dermal, rabbit: LD50 = 15800 mg/kg.
CAS# 67-63-0:
Inhalation, rat: LC50 = 16000 ppm/8H
Oral, rat: LD50 = 5045 mg/kg
Dermal, rabbit: LD50 = 12800 mg/kg.

Carcinogenicity:
CAS# 64-17-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.
CAS# 67-56-1: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.
CAS# 67-63-0: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

Epidemiology:
No information found.

Teratogenicity:
Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the "fetal alcohol syndrome". Among the characteristics of this syndrome are intrauterine and postnatal growth deficiency, a distinctive pattern of physical malformation, and behavioral/cognitive impairment such as fine motor dysfunction and mental retardation. Not all affected children have all of the features of the syndrome.

Reproductive:
Reproductive toxicity has occurred in humans and animals.

Mutagenicity:
Ethanol is mutagenic for bacteria and yeast.

Neurotoxicity:
Ethanol is a central nervous system depressant.

Section 12 - Ecological Information
No information found.

Section 13 - Disposal Considerations
Dispose of in accordance with Federal, State, and local regulations.

Section 14 - Transport Information

US DOT

<table>
<thead>
<tr>
<th>Shipping Name:</th>
<th>Ethanol Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class:</td>
<td>3</td>
</tr>
</tbody>
</table>
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UN Number: UN1170
Packing Group: PG II

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# 67-63-0 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ):
- CAS# 67-56-1: final RQ = 5000 pounds (2270 kg)

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

OSHA - Highly Hazardous:
None of the components are on this list.

US State
State Right to Know:
- Ethyl alcohol can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
- Methyl alcohol can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
- Isopropyl alcohol can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California Regulations:
WARNING: This product contains Ethyl alcohol, a chemical known to the state of California to cause developmental reproductive toxicity.

European/International Regulations
Canadian 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.

Canada Ingredient Disclosure List:
- CAS# 64-17-5 is listed on Canada's Ingredient Disclosure List.
- CAS# 67-56-1 is listed on Canada's Ingredient Disclosure List.
- CAS# 67-63-0 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: October 1, 1998
Revision Date: December 12, 2011
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