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**Rainbow Technology Corp.**  
Tel: 1.800.637.6047 / 205.733.0333  
RTC Product #7148

ISO9001:2000 Certified



## Material Safety Data Sheet

### Reagent alcohol, 50% - 70% v/v

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

**MSDS Name:**

Reagent alcohol, 50% - 70% v/v

**Catalog Numbers:**

LC22210, LC22220

**Synonyms:**

**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

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

CAS#	Chemical Name:	Percent
7732-18-5	Water	balance
64-17-5	Ethyl alcohol	50 - 70
67-56-1	Methyl alcohol	2.5 - 3.5
67-63-0	Isopropyl alcohol	2.5 - 3.5

#### Section 3 - Hazards Identification

##### Emergency Overview

**Appearance:** Clear, colorless liquid.

**Danger!** Flammable. Poison. May be fatal or cause blindness if swallowed. Causes severe eye irritation. May cause respiratory and digestive tract irritation. May cause 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, eyes.

##### Potential Health Effects

**Eye:**

Causes eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.

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**Skin:**

May cause skin irritation. May be absorbed through the skin. May cause cyanosis of the extremities.

**Ingestion:**

May be fatal or cause blindness if swallowed. 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. May cause visual impairment and possible permanent blindness. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation.

**Chronic:**

Prolonged or repeated skin contact may cause defatting and dermatitis. 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 lids until no evidence of chemical remains. Get medical aid at once.

**Skin:**

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

**Ingestion:**

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

**Inhalation:**

Move victim to fresh air immediately. Give artificial respiration if necessary. Get medical aid at once. Keep victim warm, at rest.

**Notes to Physician:**

Ethanol may inhibit methanol metabolism.

### 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. Flammable liquid. Vapors may form an explosive mixture with air. Vapors are heavier than air and can travel a source of ignition and flash back. Use water spray to keep fire-exposed containers cool. Will be easily ignited by heat, sparks, or flame.

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**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. Water may not cool substance below flash point. Straight streams of water may spread material. Cool containers with flooding quantities until well after fire is out.

**Autoignition Temperature:**

698°F (370°C)

**Flash Point:**

75 - 80°F (24 - 27°C)

**NFPA Rating:**

CAS# 7732-18-5: Health-0, Flammability-0, Instability-0

CAS# 64-17-5: Health-2, Flammability-3, Instability-0

CAS# 67-56-1: Health-1, Flammability-3, Instability-0

CAS# 67-63-0: Health-1, Flammability-3, Instability-0

**Explosion Limits:**

Lower: 4%      Upper: 19%

### Section 6 - Accidental Release Measures

**General Information:**

Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:**

Absorb spills with absorbent (vermiculite, sand, fuller's earth) and place in suitable containers labeled for later disposal. Keep out of sewers and drains. Remove all sources of ignition and provide ventilation. A vapor suppressing foam may be used to reduce vapors. Use spark-proof tools and equipment.

### Section 7 - Handling and Storage

**Handling:**

Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Avoid contact with 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.

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### Exposure Limits:

Chemical Name:	ACGIH	NIOSH	OSHA
Water	none listed	none listed	none listed
Ethyl alcohol	1000 ppm TWA	1000 ppm TWA; 1900 mg/m <sup>3</sup> TWA; 3300 ppm IDLH	1000 ppm TWA; 1900 mg/m <sup>3</sup> TWA
Methyl alcohol	200 ppm TWA; 250 ppm STEL	200 ppm TWA; 260 mg/m <sup>3</sup> TWA; 6000 ppm IDLH	200 ppm TWA; 260 mg/m <sup>3</sup> TWA
Isopropyl alcohol	200 ppm TWA; 400 ppm STEL	400 ppm TWA; 980 mg/m <sup>3</sup> TWA; 2000 ppm IDLH	400 ppm TWA; 980 mg/m <sup>3</sup> TWA

### OSHA Vacated PELs:

Ethyl alcohol: 1000 ppm TWA; 1900 mg/m<sup>3</sup> TWA  
 Methyl alcohol: 200 ppm TWA; 260 mg/m<sup>3</sup> TWA  
 Isopropyl alcohol: 400 ppm TWA; 980 mg/m<sup>3</sup> TWA

### Personal Protective Equipment

#### Eyes:

Do not wear contact lenses when working with chemicals. An eye wash fountain should be available in the immediate work area. Wear splash-proof safety goggles.

#### 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

<b>Physical State:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Alcohol-like
<b>pH:</b>	Not available
<b>Vapor Pressure:</b>	59 mbar @ 20°C
<b>Vapor Density:</b>	1.59
<b>Evaporation Rate:</b>	Not available
<b>Viscosity:</b>	1.2 mPas @ 20°C
<b>Boiling Point:</b>	78°C
<b>Freezing/Melting Point:</b>	-114°C
<b>Decomposition Temperature:</b>	Not available
<b>Solubility in water:</b>	Soluble.
<b>Specific Gravity/Density:</b>	0.88 – 0.93
<b>Molecular Formula:</b>	Not applicable
<b>Molecular Weight:</b>	Not applicable

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### Section 10 - Stability and Reactivity

**Chemical Stability:**

Stable under normal temperatures and pressures.

**Conditions to Avoid:**

Incompatible materials, excess heat.

**Incompatibilities with Other Materials:**

Strong oxidizing agents, alkali metals, halogens.

**Hazardous Decomposition Products:**

Carbon monoxide, carbon dioxide, formaldehyde.

**Hazardous Polymerization:**

Has not been reported

### Section 11 - Toxicological Information

**RTECS:**

CAS# 7732-18-5: ZC0110000.

CAS# 64-17-5: KQ6300000.

CAS# 67-56-1: PC1400000.

CAS# 67-63-0: NT8050000.

**LD50/LC50:**

CAS# 7732-18-5:

Oral, rat: LD50 = >90 mL/kg.

CAS# 64-17-5:

Inhalation, rat: LC50 = 20000 ppm/10H

Oral, mouse: LD50 = 3450 mg/kg

Oral, rat: LD50 = 7060 mg/kg

CAS# 67-56-1:

Inhalation, rat: LC50 = 64000 ppm/4H

Oral, rat: LD50 = 5600 mg/kg

Skin, rabbit: LD50 = 15800 mg/kg

CAS# 67-63-0:

Inhalation, rat: LC50 = 72600 mg/m<sup>3</sup>

Oral, rat: LD50 = 5000 mg/kg

Skin, rabbit: LD50 = 12800 mg/kg

**Carcinogenicity:**

CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

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:**

Methanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Specific developmental abnormalities include cardiovascular, musculoskeletal, and urogenital systems. Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory

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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:

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).

### Mutagenicity:

CAS# 64-17-5: DNA Inhibition: Human, Lymphocyte = 220 mmol/L.; Cytogenetic Analysis: Human, Lymphocyte = 1160 gm/L.; Cytogenetic Analysis: Human, Fibroblast = 12000 ppm.; Cytogenetic Analysis: Human, Leukocyte = 1 pph/72H (Continuous).; Sister Chromatid Exchange: Human, Lymphocyte = 500 ppm/72H (Continuous).

### Neurotoxicity:

No information found.

## 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:

CAS# 64-17-5: 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.

## Section 13 - Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

## Section 14 - Transport Information

### US DOT

**Shipping Name:** Alcohols, nos. (Ethanol)

**Hazard Class:** 3

**UN Number:** UN1987

**Packing Group:** PG III

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### Section 15 - Regulatory Information

#### US Federal

##### TSCA:

- CAS# 7732-18-5 is listed on the TSCA Inventory.
- 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: 5000 lb. final RQ (2270 kg)

##### CERCLA/SARA Section 313:

- This material contains Methyl alcohol (CAS# 67-56-1, 2.5 – 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, 2.5 – 3.5%), which is 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# 7732-18-5 is listed on Canada's DSL List.
- 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# 7732-18-5 is not listed on Canada's 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: January 31, 1999  
Revision Date: September 25, 2009

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