



## Material Safety Data Sheet

### o - Phenanthroline, 0.1% alcoholic

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

**MSDS Name:**

o - Phenanthroline, 0.1% alcoholic

**Catalog Numbers:**

LC18170

**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
64-17-5	Ethyl alcohol	90
67-56-1	Methyl alcohol	5
67-63-0	Isopropyl alcohol	5
5144-89-8	o - Phenanthroline, 0.1%	0.1

#### Section 3 - Hazards Identification

##### Emergency Overview

**Appearance:** colorless

**Danger!** *Flammable liquid. 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. Flash Point: 57°F.*

**Target Organs:** kidneys, central nervous system, liver.**Potential Health Effects****Eye:**

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



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**Skin:**

May cause skin irritation. Prolonged and/or repeated contact may cause irritation and/or dermatitis. Exposure may cause irritation characterized by redness, dryness, and inflammation.

**Ingestion:**

May cause irritation of the digestive tract. Symptoms may include: headache, excitement, fatigue, nausea, vomiting, stupor, and coma. May cause systemic toxicity with acidosis. May cause liver and kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

**Inhalation:**

Inhalation of high concentrations may cause central nervous system effects characterized by 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.

## 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:**

Get medical aid if irritation develops or persists. Remove contaminated clothing to reduce further exposure. Rinse area with large amounts of water for at least 15 minutes. Methanol is readily absorbed through the skin.

**Ingestion:**

Give conscious victim 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid at once. Induce vomiting by giving one teaspoon of Syrup of Ipecac. Induce vomiting (touch finger to back of throat) keeping head lower than hips (prevent aspiration into lungs). 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.

**Inhalation:**

Get medical aid at once. Move victim to fresh air immediately. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Keep victim warm, at rest.

**Notes to Physician:**

Treat symptomatically and supportively.

## 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 can travel to a source of ignition and flash back. Flammable Liquid. Vapor-air mixtures are explosive at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Move container if possible, avoid breathing vapors or dust.



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### Extinguishing Media:

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

### Autoignition Temperature:

Not applicable.

### Flash Point:

57°F ( 13.89°C)

### NFPA Rating:

CAS# 64-17-5 health-0; flammability-3; reactivity-0

CAS# 67-56-1 health-1; flammability-3; reactivity-0

CAS# 67-63-0 health-1; flammability-3; reactivity-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:

Wear a self-contained breathing apparatus and appropriate Personal protection. (See Exposure Controls, Personal Protection section). Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, diatomaceous earth, vermiculite, or other suitable absorbent. 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. 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. Store in a cool, dry, well-ventilated area away from incompatible substances.

Vapors heavier than air, may travel considerable distance and ignite or explode.

## Section 8 - Exposure Controls, Personal Protection

### Engineering Controls:

Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Ventilation equipment must be explosion-proof.

### Exposure Limits:



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Chemical Name:	ACGIH	NIOSH	OSHA
Ethyl alcohol	1000 ppm TWA	1000 ppm TWA; 1900 mg/m <sup>3</sup> TWA	1000 ppm TWA; 1900 mg/m <sup>3</sup> TWA
Methyl alcohol	200 ppm TWA; 250 ppm STEL; skin - potential for cutaneous absorption	200 ppm TWA; 260 mg/m <sup>3</sup> TWA	200 ppm TWA; 260 mg/m <sup>3</sup> TWA
Isopropyl alcohol	(400 ppm) TWA; (500 ppm) STEL	400 ppm TWA; 980 mg/m <sup>3</sup> TWA	400 ppm TWA; 980 mg/m <sup>3</sup> TWA
o - Phenanthroline	none	none	none

#### 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:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.

##### Skin:

Wear butyl rubber gloves, apron, and/or clothing.

##### Clothing:

Wear appropriate protective clothing to prevent skin exposure.

##### Respirators:

High Levels- CCROV/SAR/SCBA. Firefighting- SCBAF:PP,PD. (Respirator Codes: (NIOSH) Publication No. 78-210).

## Section 9 - Physical and Chemical Properties

**Physical State:** Clear liquid

**Color:** Colorless

**Odor:** Alcohol-like

**pH:** No information found.

**Vapor Pressure:** 40 mm Hg @20C

**Vapor Density:** 1.6

**Evaporation Rate:** No information found.

**Viscosity:** No information found.

**Boiling Point:** 172°F ( 77.78°C)

**Freezing/Melting Point:** -172°F ( -113.33°C)

**Decomposition Temperature:** No information found.

**Solubility in water:** Soluble.

**Specific Gravity/Density:** 0.8

**Molecular Formula:** No information found.

**Molecular Weight:** No information found.



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#### 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:**

Permonosulfuric acid, potassium hypobromite, bromine trifluoride, nitrosyl and nitryl perchlorate, hydrogen peroxides, bromoform, chloroform, nitric acid, sulfuric acid, sulfur dichloride, bromine, acetic acid, platinum, sodium hypoiodite, thiotriazolyl perchlorate, hexachloroamine, thiodiglycol, trichloromelamine, chromium trioxide, chromic anhydride, potassium t-butoxide, potassium bichromate, chromyl chloride, acetyl chloride, acetyl bromide, bromine pentafluoride, permanganic acid, potassium dioxide, hydrogen peroxide/sulfuric acid mixes, ammonium hydroxide/silver oxide mixes, hydrogen peroxide/iodine/phosphorous mixes, silver nitrate, silver/nitric acid mix forms explosive compounds, 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.

CAS# 67-56-1: PC1400000.

CAS# 67-63-0: NT8050000.

**LD50/LC50:**

CAS# 64-17-5:

Inhalation, mouse: LC50 = 39 gm/m<sup>3</sup>/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.

CAS# 67-56-1:

Inhalation, rat: LC50 = 64000 ppm/4H

Oral, mouse: LD50 = 7300 mg/kg

Oral, rabbit: LD50 = 14200 mg/kg

Oral, rat: LD50 = 5628 mg/kg

Skin, rabbit: LD50 = 15800 mg/kg.

CAS# 67-63-0:

Oral, mouse: LD50 = 3600 mg/kg

Oral, rabbit: LD50 = 6410 mg/kg

Oral, rat: LD50 = 5045 mg/kg

Skin, rabbit: LD50 = 12800 mg/kg.

**Carcinogenicity:**

CAS# 64-17-5

ACGIH: A4 - Not Classifiable as a Human Carcinogen

California: Not listed.

NIOSH: Not listed.



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NTP: Not listed.  
OSHA: Not listed.  
IARC: Not listed.

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

ACGIH: Not listed.  
California: Not listed.  
NIOSH: Not listed.  
NTP: Not listed.  
OSHA: Not listed.  
IARC: Group 3

### **Epidemiology:**

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. Central Nervous System depressant. Alcohol component enhances effect.

### **Teratogenicity:**

### **Reproductive:**

### **Mutagenicity:**

### **Neurotoxicity:**

## 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**

**Shipping Name:** Ethanol Solution

**Hazard Class:** 3

**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.



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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%), 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, 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:**

None listed.

## 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: September 21, 2004

Revision Date: September 23, 2004

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