ISO9001:2000 Certified

Material Safety Data Sheet
Ethanol-Benzene Mixture, 1:2

Section 1 - Chemical Product and Company Identification

MSDS Name:
Ethanol-Benzene Mixture, 1:2
Catalog Numbers:
LC14100
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	29.9
67-56-1	Methyl alcohol	1.7
67-63-0	Isopropyl alcohol	1.7
71-43-2	Benzene	66.6

Section 3 - Hazards Identification

Emergency Overview

Appearance: *Colorless*

Danger! Flammable liquid. Cancer hazard. 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: 27°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.

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 with drying, cracking skin. Denatured ethanol is associated with respiratory irritation, central nervous system depression, visual impairment, dermatitis, conjunctivitis, sensory and motor impairment. Prolonged inhalation may affect central nervous system and cause anemia or leukemia. Repeated ingestion may affect kidneys and gastrointestinal tract. Prolonged inhalation may cause auditory nerve damage and vertigo. Benzene is a cancer hazard.

Section 4 - First Aid Measures

Eyes:

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:

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

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 or by touching finger to back of throat, keeping head lower than hips to 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 flash point. Use water spray to keep fire-exposed containers cool. Move container if possible; avoid breathing vapors or dust. Vapors may be

heavier than air. They can spread along the ground and collect in low or confined areas. Dangerous fire/negligible explosion hazard when exposed to heat or flame.

Extinguishing Media:

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

Autoignition Temperature:

498°C (928.40°F)

Flash Point:

27 C (81 F)

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
CAS # 71-43-2: health-2; flammability-3; reactivity-0

Explosion Limits:

Lower: 1.2 Upper: 7.8

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:

Chemical Name:	ACGIH	NIOSH	OSHA
Ethyl alcohol	1000 ppm TWA	1000 ppm TWA; 1900 mg/m3 TWA	1000 ppm TWA; 1900 mg/m3 TWA
Methyl alcohol	200 ppm TWA;250 ppm STEL; skin - potential for cutaneous absorption	200 ppm TWA; 260 mg/m3 TWA	200 ppm TWA; 260 mg/m3 TWA
Isopropyl alcohol	400 ppm TWA; 500ppm STEL	400 ppm TWA; 980 mg/m3 TWA	400 ppm TWA; 980 mg/m3 TWA
Benzene	0.5 ppm TWA;2.5 ppm STEL; skin - potential for cutaneous absorption	0.1 ppm TWA; NIOSH Potential Occupational Carcinogen - see Appendix A	10 ppm TWA (apply only to exempt industry segments); C 25 ppm; 1 ppm TWA; 5 ppm STEL; 0.5 ppm TWA action limit; Cancer hazard; Flammable (see 2)

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
Benzene: 10 ppm TWA (unless specified in 1910.1028)

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 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: Liquid
Color: Colorless
Odor: Aromatic odor - solvent odor
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: Greater than water.
Viscosity: Not available.
Boiling Point: Not available.
Freezing/Melting Point: Not available.
Decomposition Temperature: Not available.
Solubility in water: Not available.
Specific Gravity/Density: Not available.
Molecular Formula: Not applicable.

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Molecular Weight: Not applicable.

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, thiotriazyl 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.
CAS# 71-43-2: CY1400000.
LD50/LC50:
CAS# 64-17-5:
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.
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.

CAS# 71-43-2:
Inhalation, mouse: LC50 =9980 ppm
Inhalation, rat: LC50 =10000 ppm/7H
Oral, mouse: LD50 = 4700 mg/kg
Oral, rat: LD50 = 930 mg/kg
Skin, rabbit: LD50 = >9400 mg/kg.

Carcinogenicity:

CAS# 64-17-5
ACGIH: A4 - Not Classifiable as a Human Carcinogen
Not listed as a carcinogen by 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, NIOSH, NTP, OSHA, or CA Prop 65.
IARC: Group 3

CAS# 71-43-2
ACGIH: A1-confirmed human carcinogen
California: carcinogen; initial date 2/27/87
NIOSH: occupational carcinogen
NTP: Known carcinogen
OSHA: Select carcinogen
IARC: Group 1 carcinogen

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. Benzene is a known carcinogen.

Teratogenicity:

See RTECS.

Reproductive:

See RTECS.

Mutagenicity:

See RTECS.

Neurotoxicity:

See RTECS.

Section 12 - Ecological Information

No information found.

Section 13 - Disposal Considerations

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

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Section 14 - Transport Information

US DOT

Shipping Name: Flammable liquid, n.o.s.
Hazard Class: 3
UN Number: UN1993
Packing Group: PGII

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.
CAS# 71-43-2 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ):

CAS# 67-56-1: final RQ = 5000 pounds (2270 kg)
CAS# 71-43-2: final RQ = 10 pounds (4.54 kg); receives an adjustable RQ of 10 pounds based on

CERCLA/SARA Section 313:

This material contains Methyl alcohol (CAS# 67-56-1, <2%), Isopropyl alcohol (CAS# 67-63-0, <2%), and Benzene (CAS# 71-43-2, 50%), 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.
Benzene can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California Regulations:

WARNING: This product contains Benzene, a chemical known to the state of California to cause cancer and male developmental 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.
CAS# 71-43-2 is listed on Canada's DSL List.

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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.
CAS# 71-43-2 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: August 21, 2006
Revision Date: None

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