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GHS Safety Data Sheets

The Mystery of Lyle and Louise Forensic Entomology

This document contains GHS safety data sheets for the following kit items:

- **Entomological Specimen**

Safety Data Sheet

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Section 1 - Chemical Product and Company Identification

Name: Ethanol

Common Synonyms: Entomology kit, ethanol, ethyl alcohol

Molecular Weight: Mixture

Chemical Formula: C₂H₄OH.

Chemtrec Phone: 800-424-9300

National Response Center 800-424-8802

Product Use: Laboratory Reagent

Section 2 - Hazard Identification

FLAMMABLE LIQUID Category 2

DANGER: Highly flammable liquid and vapor

NFPA Ratings: Health: **1** Flammability: **3** Reactivity: **0** Other: **N/A**

Emergency Overview

Warning: May be harmful if swallowed. May cause skin and eye irritation.

Effects of overexposure:

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.

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.

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

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

Chronic Exposure: 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.

Aggravation of Pre-existing Conditions: No information available.

Section 3 - Composition / Information on Ingredients

<u>Ingredient</u>	<u>CAS No.</u>	<u>Percent</u>
Ethanol	64-17-5	70%
Water	7732-18-5	30%

Section 4 - First Aid Measures

Inhalation: Remove to fresh air immediately. If breathing is difficult, give oxygen. Get medical attention for any breathing difficulty. Do not use mouth-to-mouth resuscitation.

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. person.
Skin Contact: Wash exposed area with soap and water. Remove contaminated clothing.
Eye Contact: Immediately flush thoroughly with water for at least 15 minutes. Get medical attention least 15 minutes, lifting lower and upper eyelids occasionally.

Section 5 - Fire-Fighting Measures

Fire: Extremely flammable liquid and vapor. Vapor may cause flash fire. 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.

Explosion: 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.

Fire Extinguishing Media: Use dry chemical, carbon dioxide, or appropriate foam. Water may be ineffective because it will not cool material below its flash point.

Special Information: Use protective clothing and equipment appropriate for the surrounding fire.

Section 6 - Accidental Release Measures

Absorb spill with inert material such as vermiculite and place in suitable container. Avoid runoff into drains which lead to waterways. Wear appropriate personal protective equipment as specified in Section 8. Use only non-sparking tools and equipment.

Section 7 - Handling and Storage

Keep away from sources of ignition. Keep in a tightly closed container in cool, dry place. Protect against physical damage.

Storage Segregation Hazard Classes: Flammables.

Section 8 - Exposure Controls / Personal Protection

OSHA Vacated PELs: Ethanol: 1000 ppm TWA; 1900 mg/m³ TWA

Personal Respirators: NIOSH/MSHA approved respirator. Select respiratory device based on concentrations of actual or potential airborne contaminants.

Skin Protection: Wear protective gloves and clean body-covering clothing.

Eye Protection: Use chemical safety glasses with side shields. Maintain eye wash fountain and quick-drench facilities in work area.

Airborne Exposure Limits: OSHA Permissible Exposure Limit (PEL) 8 hour: 15 mg/m³ total dust, 5 mg/m³ respirable fraction for nuisance dusts. ACGIH Threshold Limit Value (TLV): 10 mg/m³ total dust containing no asbestos and <1% crystalline silica for Particulates Not Otherwise Classified (PNOC).

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

General: Wash after handling. Avoid contact and inhalation. Avoid prolonged or repeated exposure. Keep tightly closed. Store in a cool dry place.

Section 9 - Physical and Chemical Properties

Appearance: Clear Liquid

Odor: Sweet

Odor Threshold: N/A

pH: 6.5-7

Melting Point: -114 C

Boiling Point: 78 C

Flash Point: 21 C 13 C

Evaporation Rate: N/A

Section 10 - Stability and Reactivity

Stability: Stable and non-reactive under normal conditions.

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

Incompatibilities: 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-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

Section 11- Toxicological Information

RTECS#:

CAS# 64-17-5: KQ6300000

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;

Carcinogenicity: CAS# 64-17-5: 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: 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 available.

Mutagenicity: 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).

Other Studies: Standard Draize Test(Skin, rabbit) = 20 mg/24H (Moderate) Standard Draize Test: Administration into the eye (rabbit) = 500 mg (Severe).

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.

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

Observe all federal, state, and local environmental regulations. RCRA Hazardous Waste No. not applicable. Material is non-hazardous per 40 CFR 261.

Section 14 - Transport Information

Ground - DOT Proper Shipping Name: Air - IATA Proper Shipping Name: UN1170 Ethanol solutions Class 3 P.G. II UN1170 Ethanol solutions Class 3 P.G. II

Section 15 - Regulatory Information

Chemical Name CAS Number § 313 Name § 304 RQ CERCLA RQ § 302 TPQ CAA 112 (2)
TQ Ethanol 64-17-5 No No No No No Reactivity: No (Pure / Solid)

Australian Hazchem Code: 2Y

Poison Schedule: S6

Section 16 - Other Information

Updated May 29, 2015

WHMIS:

This SDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by the CPR.

The above information has been developed based upon currently available scientific data. New information may be developed from time to time which may render the conclusions of this report obsolete. Therefore, no warranty is extended as to the applicability of this information to the user's intended purpose or for the consequences of its use or misuse. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Crosscutting Concepts, LLC shall not be held liable for any damage resulting from handling or from contact with the above product.