Material Safety Data Sheet

Section 1: Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>Catalog Number:</th>
<th>10440, 10445, 18280, 6590, 6591</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Identity:</td>
<td>REAGENT ALCOHOL, ANHYDROUS, ABSOLUTE, 200 PROOF, ETHANOL DENATURED</td>
</tr>
<tr>
<td>Manufacturer's Name:</td>
<td>RICCA CHEMICAL COMPANY LLC</td>
</tr>
<tr>
<td>Emergency Contact(24 hr) -- CHEMTREC®</td>
<td>Domestic: 800-424-9300 International: 703-527-3887</td>
</tr>
<tr>
<td>CAGE Code:</td>
<td>0V553</td>
</tr>
<tr>
<td>Address:</td>
<td>448 West Fork Dr Arlington, TX 76012</td>
</tr>
<tr>
<td>Telephone Number For Information:</td>
<td>817-461-5601</td>
</tr>
<tr>
<td>Date Prepared:</td>
<td>8/18/99</td>
</tr>
<tr>
<td>Revision:</td>
<td>7</td>
</tr>
<tr>
<td>Last Revised:</td>
<td>06/22/2006</td>
</tr>
<tr>
<td>Date Printed:</td>
<td>08/31/2006 12:00:28 pm</td>
</tr>
</tbody>
</table>

Section 2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Registry #</th>
<th>Concentration</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
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</thead>
<tbody>
<tr>
<td>Ethyl Alcohol (Ethanol)</td>
<td>64-17-5</td>
<td>89.5-91.4</td>
<td>1000 ppm</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>Methanol (Methyl Alcohol)</td>
<td>67-56-1</td>
<td>4-6</td>
<td>200 ppm</td>
<td>200 ppm</td>
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<tr>
<td>Isopropyl Alcohol (Isopropanol, 2-Propanol)</td>
<td>67-63-0</td>
<td>4-6</td>
<td>400 ppm</td>
<td>400 ppm</td>
</tr>
</tbody>
</table>

Section 3: Hazard Identification

**Emergency Overview:** Flammable liquid. Poison. Cannot be made nonpoisonous. May be fatal or cause blindness if swallowed. If ingested, give large quantity of water and induce vomiting. Call a physician. Contact may cause dryness and cracking of the skin. May cause irritation to the eyes. Wash areas of contact with plenty of water. May cause irritation of the respiratory system.

**Target Organs:** eyes, skin, respiratory system, central nervous system, liver, pancreas.

**Eye Contact:** May cause irritation with burning and stinging with possible damage to the cornea and conjunctiva.

**Inhalation:** Inhalation of vapors irritates the respiratory tract. May cause coughing, dizziness and headache. Exposure to high concentrations can cause depression of the central nervous system with symptoms of sleepiness and lack of concentration.

**Skin Contact:** Results in drying and cracking which can lead to secondary infections and dermatitis.

**Ingestion:** Symptoms can include sleep disorders, hallucinations, distorted perceptions, ataxia, motor function changes, convulsions and tremors, coma, headaches, pulmonary changes, alteration of gastric secretions, blindness, and in acute cases, death.

**Chronic Effects/Carcinogenicity:** None

IARC - Isopropyl Alcohol (Isopropanol, 2-Propanol) is unclassifiable as to carcinogenicity to humans.
Section 4: First Aid Measures - In all cases, seek qualified evaluation.

**Eye Contact:** Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

**Skin Contact:** Wash areas of contact with soap and water for at least 15 minutes. Call a physician if irritation develops.

**Ingestion:** Dilute immediately with water or milk. Induce vomiting. Call a physician.

Section 5: Fire Fighting Measures

**Flash Point:** 12.5°C  
**LFL:** 3.3%  
**UFL:** 19%

**Extinguishing Media:** Use water spray, dry chemical, alcohol foam, or carbon dioxide for extinguishing the surrounding fire. Water spray can be used to dilute spills to non-flammable mixtures.

**Fire & Explosion Hazards:** Vapors can flow along surfaces to distant ignition source and flashback. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from fire. Explosion hazard when exposed to heat, flame or oxidizers.

**Fire Fighting Instructions:** Poisonous gases are produced in fire. Continue to cool containers with water after fire is extinguished. For larger fires, use unmanned hose apparatus, if possible. Consider down wind conditions. Do not release runoff from fire-fighting measures to sewers or waterways.

**Fire Fighting Equipment:** Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Section 6: Accidental Release Measures

Remove all sources of ignition. Contain spill. Do not flush to sewer. Absorb with suitable inert material (vermiculite, dry sand, etc) and place in a chemical waste container for proper disposal in an approved waste disposal facility. Ventilate area of spill. Have extinguishing agent available in case of fire. Use non-sparking tools and equipment. Dispose of in accordance with local regulations.

Section 7: Handling and Storage

As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Store in secure, flammable storage area away from all sources of ignition. Empty containers may be hazardous since they retain product residues.

**Safety Storage Code:** Flammable

Section 8: Exposure Control/Personal Protection

**Engineering Controls:** A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limit.

**Respiratory Protection:** Normal room ventilation is adequate. If the exposure limit is exceeded, a full facepiece respirator with organic vapor cartridge may be worn.

**Skin Protection:** Chemical resistant gloves.

**Eye Protection:** Safety glasses or goggles.

Section 9: Physical and Chemical Properties

**Appearance:** Clear, colorless liquid  
**pH:** Not Available.

**Odor:** Characteristic alcohol  
**Boiling Point(°C):** Approximately 76

**Solubility in Water:** Infinite  
**Melting Point(°C):** Approximately -110

**Specific Gravity:** Approximately 0.8  
**Vapor Pressure:** Not Applicable.

Section 10: Stability and Reactivity
Chemical Stability: Stable under normal conditions of use and storage.

Incompatibility: Oxidizers, platinum, Sodium, Potassium Dioxide, Bromine Pentafluoride, Acetyl Bromide, Acetyl Chloride, concentrated Nitric Acid, Sulfuric Acid, heat, sparks, open flame.

Hazardous Decomposition Products: Acrid and irritating fumes, including toxic oxides of carbon, when heated to decomposition.

Hazardous Polymerization: Will not occur.

Section 11. Toxicological Information
LD50, Oral, Rat: (Methanol) 5628 mg/kg, details of toxic effects not reported other than lethal dose value, (Ethanol) 7060 mg/kg, respiration changes noted, (Isopropanol) 5045 mg/kg, behavioral effects noted.

Section 12. Ecological Information
Ecotoxicological Information: Ethanol has moderate chronic toxicity to aquatic life.

Chemical Fate Information: This material is not expected to significantly bioaccumulate. Ethanol is slightly persistent in water, with a half-life of between 2 to 20 days.

Section 13. Disposal Considerations
Do not flush to sewer. Absorb with suitable inert material (vermiculite, dry sand, earth) and place in a chemical waste container for proper disposal in an approved waste disposal facility for incineration in a chemical incinerator equipped with scrubber and afterburner. Ventilate area of spill. Have extinguishing agent available in case of fire. Eliminate all sources of ignition. Use non-sparking tools and equipment. Always dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information
Part Numbers: 10440 4LT, 10440 500ML, 10445 4-LT, 10445 500ML, 10445C 4-LT, 18280 4LT, 18280 500ML, 6590-1, 6590-16, 6590-2.5, 6590-32, 6590-5, 6591-1

D.O.T. Shipping Name: Ethanol Solutions
D.O.T. Hazard Class: 3
U.N. / N.A. Number: UN1170
Packing Group: II
D.O.T. Label: 3

Section 15. Regulatory Information (Not meant to be all inclusive - selected regulation represented)


TSCA Status: All components of this solution are listed on the TSCA inventory or are mixtures (hydrates) of items listed on the TSCA Inventory.

Sara Title III:
Section 302 Extremely Hazardous Substances: Not Applicable.
Section 311/312 Hazardous Categories: No
Section 313 Toxic Chemicals: Not Applicable.

California: None Reported.

Pennsylvania: Methanol (Methyl Alcohol) is listed as an Environmental Hazard on the state's Hazardous Substances List. Isopropyl Alcohol (Isopropanol, 2-Propanol) is listed as an Environmental Hazard on the state's Hazardous Substances List. Ethyl Alcohol (Ethanol) is listed as a Basic Hazard on the state's Hazardous Substances List.

RCRA Status: U154

CERCLA Reportable Quantity: Methanol (Methyl Alcohol) - 5,000 pounds.

Section 16. Other Information

NFPA Ratings:

Health: 1  Flammability: 3  Reactivity: 0  Special Notice Key: None

HMIS Ratings:

Health: 1  Flammability: 3  Reactivity: 0  Protective Equipment: B (Protective Eyewear, Gloves)

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.