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## 1. IDENTIFICATION

Product Name: **RUBBING ALCOHOL COMPOUND**

Manufacturer: RW Packaging Ltd.  
200 Omandø Creek Blvd  
Winnipeg, Manitoba  
Canada R2R 1V7  
Ph: (204) 786-6873

Emergency Telephone No.: (613) 996-6666 (Canutec)

Composition/Purity of  
Hazardous Ingredients: Ethyl Alcohol 95% v/v  
Diethyl Pthalate (D.E.P.) 0.25% v/v  
Camphor: 40g/ 100L  
Bitrex (Denatonium Benzoate): 700 mg/100L

IUPAC Chemical Name: Ethanol  
(D.E.P.) 1, 2 - Benzenedicarboxylic acid  
diethylester

Synonym(s): None

CAS Registry Number: Ethanol 64-17-5  
D.E.P. 84-66-2  
Camphor 76-22-2  
Bitrex (Denatonium Benzoate) 3734-33-6

PIN-UN/NA Number(s): 1987

TDG Classification (Class,  
Division and Packing Group): Alcohol N.O.S., 3 II

Chemical Family: Ethanol - aliphatic alcohols  
D.E.P. - aliphatic esters

Molecular Formula:	Ethanol - C <sub>2</sub> H <sub>6</sub> O D.E.P. - C <sub>12</sub> H <sub>14</sub> O <sub>4</sub> Camphor C <sub>10</sub> H <sub>18</sub> O Bitrex (Denatonium Benzoate)C <sub>28</sub> H <sub>34</sub> N <sub>2</sub> O <sub>3</sub>
Structural Formula:	Ethanol - CH <sub>3</sub> -CH <sub>2</sub> -OH D.E.P. - (C <sub>6</sub> H <sub>4</sub> ), 1, 2 - (COO C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>
WHMIS Classification:	B2, D2B
Warning Properties:	Flammable, moderately toxic

### **General Descriptions**

Appearance, Odour and State:	Clear colourless liquid with a characteristic camphor odour and bitter flavour.
Odour Threshold:	1.2 - 1.6 ppm (Camphor) 0.1 - 5100 ppm (Ethanol)
Uses and Occurrences:	Rubbing alcohol is a typical remedy for reducing fevers, relieving bedsores and other rashes as well as reducing aches from bruises or strains.

## **2. PHYSICAL DATA**

Boiling Point:	78.4° C
Molecular Weight:	Mixture
Specific Gravity (Water=1):	0.811
Solubility in Water:	Partial (D.E.P immiscible)
pH:	N/A
Vapour Density (air=1):	1.6 (ethanol) 7.7 (DEP) 5.3 (Camphor)
Vapour Pressure:	5.87 KPa @ 20°C (ethanol) 24 KPa @ 20°C (Camphor) 0.001 KPa @ 20°C (D.E.P)

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% Volatiles:	100%
Saturation Vapour Concentration:	5.78% @ 20°C (ethanol)
Evaporation Rate (Butyl Acetate = 1):	N/A
Co-efficient of Water/Oil Distribution:	Separates from oil.

### **3. FIRE AND EXPLOSION HAZARDS**

Flash Point and Method:	17°C
Lower Explosive Limit/Lower Flammable Limit (%):	3.3 (ethanol) 0.6 (Camphor)
Upper Explosive Limit/Upper Flammable Limit (%):	19 (ethanol) 3.5 (Camphor)
Autoignition Temperature:	422°C
Extinguishing Media:	Apply aqueous film forming foam (AFFF) according to manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires. Use water only in the form of a fog. Vapours from this product are heavier than air and may travel to a source of ignition some distance away and then "flash back" to the point of product discharge causing an explosion and fire.
Special Fire Fighting Procedures:	Note: This product burns with a flame which is virtually colourless in daylight.
Combustion Products:	Carbon Dioxide or Carbon Monoxide
Hazardous Explosion Data:	
- Sensitivity to Impact:	No Data
- Sensitivity to Static Discharge:	See note on "flash back".

**4. REACTIVITY DATA**

Chemical Stability:	Stable under normal conditions.
Incompatibility:	Oxidizing agents. Ethanol reacts with aluminum at elevated temperatures.
Hazardous Decomposition Products:	CO <sub>2</sub> , CO
Hazardous Polymerization:	Will not occur.
Corrosiveness to Metals:	Not under normal conditions.

**5. HEALTH HAZARD DATA****A. ROUTES OF ENTRY**

	<u>Yes</u>	<u>No</u>
i) Inhalation	X	
ii) Eye Contact	X	
iii) Skin Contact	X	
iv) Skin Absorption	X	
v) Ingestion	X	

**B. EFFECTS OF SHORT-TERM (ACUTE EXPOSURE)**

Inhalation:	Prolonged exposure to high concentrations may cause irritation of the eyes, nose and throat and CNS depression. CNS depression is characterized by headache, dizziness, drowsiness, nausea, vomiting, abdominal pain, and incoordination.
Eye Contact:	Irritation, redness, pain. May cause conjunctivitis and transitory injury to the cornea.
Skin Contact:	Direct contact with ethanol may cause defatting, drying and cracking of the skin.

Ingestion: May cause burning sensation in mouth and throat, dilation of pupils, and CNS depression. Alcohol intoxication occurs when blood levels reach 0.05%-0.15%; between 0.15%-0.30% individuals are clinically intoxicated; between 0.3%-0.5 severe poisoning may occur and above 0.5% the individual may be comatose and death may occur. May cause dizziness, drowsiness, decreased responsiveness, euphoria, nausea, vomiting, lack of coordination and coma.

### C. ANIMAL TOXICITY DATA

Toxicity: Oral: Rat LD50 =7060 mg/kg dermal; Rabbit LD-50=20,000 mg/kg. Inhalation: Rat LC-50=31,623 ppm/4hours.

### D. EFFECTS OF LONG-TERM (CHRONIC) EXPOSURE

Irritancy of Product:

Skin: Prolonged or repeated exposure may cause dermatitis.

Ingestion/Inhalation: Severe overexposure may lead to coma, and possible death due to respiratory failure. Intentional misuse of ethanol may cause heart and circulatory problems and permanent liver damage.

Sensitizing Capability: No Data

Carcinogenicity: Not considered to be carcinogen by the National Testing Program, IARC or the OSHA.

Teratogenicity: No Data

Synergistic Materials: Some alkaloids and other CNS depressors (barbiturates), Carbon Tetrachloride, Chloroform, Bromotrichloromethane, Dimethylnitrosamine, Thioacetamide.

**E. OCCUPATIONAL EXPOSURE LIMITS**

Threshold Limited Values (TLVS):	ACGIH
Time-Weighted Average (TLV-TWA):	1000 ppm
Short-Term Exposure Limit (TLV-STEL):	No Data

**6. FIRST AID****IN ALL CASES GET IMMEDIATE MEDICAL ATTENTION!**

Inhalation:	Remove to fresh air. Give artificial respiration if not breathing.
Eye Contact:	Immediately flush eyes with lots of running water for 20 minutes, lifting the upper and lower eyelids occasionally.
Skin Contact:	Wash skin with lots of soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if irritation persists after washing.
Ingestion:	Unless unconscious or convulsing, give copious amounts of water to dilute stomach contents. If vomiting occurs naturally, lean forwards to avoid aspiration. Do not induce vomiting.
Special Equipment/Antidotes:	Note to Physician: The unabsorbed alcohol should be removed by gastric lavage after intubing the patient to prevent aspiration.
First Aid Comments:	None

## **7. PREVENTATIVE MEASURES**

### **A. ENVIRONMENTAL AND DISPOSAL INFORMATION**

**Spill and Leak Procedures:**

Eliminate all sources of ignition. Stop or reduce discharge if safe to do so. Prevent from entering water courses or sewers. Ventilate enclosed spaces. For large spills warn public of potential downward explosion hazard due to "flash back" of flammable vapours. Contain by diking for release to land, or damming for release to water.

**Disposal:**

Recover product and collect contaminated soil or water for treatment and/or disposal. Small spills can be contained by applying absorbent materials. Collect waste absorbent and contaminated soil for disposal. For significant releases, contact appropriate regulatory authorities.

### **B. STORAGE AND HANDLING**

**Storage:**

Keep away from heat, sparks, and flames. Store in a well-ventilated cool, dry place away from strong oxidizers. Vent container frequently and more often in warm weather, to relieve pressure.

**Handling:**

Electrically ground all equipment when handling this product and use only non-sparking tools. Keep container tightly closed when not in use. Do not use pressure to empty container.

**Exposure Control:**

Wash thoroughly after handling.

**Engineering Controls:**

Do not cut, grind, weld or drill on or near this container. Ensure ventilation requirements are maintained.

**C. PERSONAL PROTECTIVE EQUIPMENT**

Respiratory Protection:	Up to 1000 ppm use a NIOSH-approved organic vapor respirator in the absence of adequate environmental controls at the point of use. For concentrations above 1000 ppm, an air supply respirator is recommended.
Eye/Face Protection:	Chemical goggles.
Skin Protection:	Long-sleeved shirt, trousers, safety gloves, neoprene gloves and rubber apron.
Resistance of Materials for Protective Clothing:	Neoprene or nitrile.
Personal Protection Comments:	An eyewash and safety shower should be nearby and ready for use.

**8. REFERENCES**

- NIOSH Pocket Guide to Chemical Hazards
- Canada Centre for Occupational Health and Safety
- Trade names - data base
- CHEM INFO - data base
- RTECS - data base
- Supplier Material Safety Data Sheets
- Manufacturing Chemists Association- Material Safety Data Sheets
- American Conference of Governmental Industrial Hygienists Handbook of Threshold Limit Values and Biological Indices.

Prepared by: RW Packaging Ltd.  
(204) 786-6873

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