1. Identification

Product Name: Ethanol 70%
Cat No.: R40135, R2470110

Synonyms: No information available

Recommended Use: Laboratory chemicals.
Uses advised against: Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company: Remel
12076 Santa Fe Drive
Lenexa, KS 66215 United States
Telephone: 1-800-255-6730
Fax: 1-800-621-8251

Emergency Telephone Number:
INFOTRAC - 24 Hour Number: 1-800-535-5053
Outside of the United States, call 24 Hour Number: 001-352-323-3500 (Call Collect)

2. Hazard(s) identification

Classification:
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids: Category 2
Specific target organ toxicity (single exposure): Category 1
Target Organs - Central nervous system (CNS), Respiratory system.
Specific target organ toxicity - (repeated exposure): Category 2
Target Organs - Heart, Liver, Kidney, Blood.

Label Elements

Signal Word: Danger

Hazard Statements:
Highly flammable liquid and vapor
May cause respiratory irritation
May cause drowsiness or dizziness
Causes damage to organs
May cause damage to organs through prolonged or repeated exposure
Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool
Response
IF exposed: Call a POISON CENTER or doctor/physician
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
None identified
WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

3. Composition / information on ingredients

OSHA Hazard Classification

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>64-17-5</td>
<td>66.5</td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>67-56-1</td>
<td>3.5</td>
</tr>
</tbody>
</table>

4. First-aid measures

Eye Contact     Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Skin Contact    Wash off immediately with plenty of water for at least 15 minutes.
Inhalation      Move to fresh air.
Ingestion       Do not induce vomiting. Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects
Breathing difficulties... Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Notes to Physician Treat symptomatically
5. Fire-fighting measures

Suitable Extinguishing Media
Dry chemical. Carbon dioxide (CO2). Cool closed containers exposed to fire with water spray.

Unsuitable Extinguishing Media
Water may be ineffective

Flash Point
12 °C / 53.6 °F
Method -
Closed cup

Autoignition Temperature
363 °C / 685.4 °F

Explosion Limits
Upper 19.0%
Lower 3.3%

Sensitivity to Mechanical Impact
No information available

Sensitivity to Static Discharge
Yes

Specific Hazards Arising from the Chemical
Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products
Carbon monoxide (CO) Carbon dioxide (CO2)

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

6. Accidental release measures

Personal Precautions
Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions
See Section 12 for additional ecological information. Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Provide adequate ventilation.

7. Handling and storage

Handling
Ensure adequate ventilation. Avoid contact with skin and eyes. Keep away from open flames, hot surfaces and sources of ignition. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

Storage
Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines
9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>STEL: 1000 ppm</td>
<td>(Vacated) TWA: 1000 ppm</td>
<td>IDLH: 3300 ppm</td>
<td>TWA: 1000 ppm TWA: 1900 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) TWA: 1900 mg/m³</td>
<td>TWA: 1000 ppm TWA: 1900 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>TWA: 200 ppm</td>
<td>(Vacated) TWA: 200 ppm</td>
<td>IDLH: 6000 ppm</td>
<td>TWA: 200 ppm TWA: 260 mg/m³</td>
</tr>
<tr>
<td></td>
<td>STEL: 250 ppm</td>
<td>(Vacated) TWA: 260 mg/m³</td>
<td>TWA: 200 ppm TWA: 260 mg/m³</td>
<td>STEL: 250 ppm TWA: 325 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Skin</td>
<td>(Vacated) STEL: 250 ppm</td>
<td>TWA: 200 ppm TWA: 260 mg/m³</td>
<td>STEL: 250 ppm TWA: 325 mg/m³</td>
</tr>
</tbody>
</table>

**Legend**

- **ACGIH** - American Conference of Governmental Industrial Hygienists
- **OSHA** - Occupational Safety and Health Administration
- **NIOSH IDLH**: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

**Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment.

**Personal Protective Equipment**

- **Eye/face Protection**: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
- **Skin and body protection**: Wear appropriate protective gloves and clothing to prevent skin exposure.
- **Respiratory Protection**: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.
10. Stability and reactivity

**Reactive Hazard**
None known, based on information available

**Stability**
Stable under normal conditions.

**Conditions to Avoid**

**Incompatible Materials**
Strong oxidizing agents

**Hazardous Decomposition Products**
Carbon monoxide (CO), Carbon dioxide (CO₂)

**Hazardous Polymerization**
Hazardous polymerization does not occur.

**Hazardous Reactions**
None under normal processing.

11. Toxicological information

**Acute Toxicity**

**Product Information**

**Oral LD50**
Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

**Dermal LD50**
Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

**Vapor LC50**
Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

**Component Information**

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>LD50 = 7060 mg/kg (Rat)</td>
<td>Not listed</td>
<td>20000 ppm/10H (Rat)</td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>Calc. ATE 60 mg/kg</td>
<td>Calc. ATE 60 mg/kg</td>
<td>Calc. ATE 0.6 mg/L (vapours) or 0.5 mg/L (mists)</td>
</tr>
<tr>
<td></td>
<td>LD50 &gt; 1187 – 2769 mg/kg (Rat)</td>
<td>LD50 = 17100 mg/kg (Rabbit)</td>
<td>LC50 = 128.2 mg/L (Rat) 4 h</td>
</tr>
</tbody>
</table>

**Toxicologically Synergistic Products**
No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation**
Irritating to eyes Irritating to skin

**Sensitization**
No information available

**Carcinogenicity**
The table below indicates whether each agency has listed any ingredient as a carcinogen. Ethanol has been shown to be carcinogenic in long-term studies only when consumed and abused as an alcoholic beverage.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>64-17-5</td>
<td>Group 1</td>
<td>Known</td>
<td>A3</td>
<td>X</td>
<td>Not listed</td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>67-56-1</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

IARC: (International Agency for Research on Cancer)

ACGIH: (American Conference of Governmental Industrial Hygienists)

**Mutagenic Effects**
No information available

**Reproductive Effects**
May cause birth defects. Possible risk of harm to the unborn child.

**Developmental Effects**
No information available.

**Teratogenicity**
No information available.
Ethanol 70%

STOT - single exposure  Central nervous system (CNS) Respiratory system
STOT - repeated exposure  Heart Liver Kidney Blood

Aspiration hazard  No information available

Symptoms / effects, both acute and delayed  Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Endocrine Disruptor Information  No information available

Other Adverse Effects  The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
Contains a substance which is:. Toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>EC50 (72h) = 275 mg/l (Chlorella vulgaris)</td>
<td>Fathead minnow (Pimephales promelas) LC50 = 14200 mg/l/96h</td>
<td>Photobacterium phosphoreum: EC50 = 34634 mg/L/30 min Photobacterium phosphoreum: EC50 = 35470 mg/L/5 min</td>
<td>EC50 = 9268 mg/L/48h EC50 = 10800 mg/L/24h</td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>Not listed</td>
<td>Pimephales promelas: LC50 &gt; 10000 mg/l 96h</td>
<td>EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min</td>
<td>EC50 &gt; 10000 mg/L 24h</td>
</tr>
</tbody>
</table>

Persistence and Degradability  Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation  No information available.

Mobility  Will likely be mobile in the environment due to its volatility.

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>-0.32</td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>-0.74</td>
</tr>
</tbody>
</table>

13. Disposal considerations

Waste Disposal Methods  Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

<table>
<thead>
<tr>
<th>Component</th>
<th>RCRA - U Series Wastes</th>
<th>RCRA - P Series Wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl alcohol</td>
<td>U154</td>
<td>-</td>
</tr>
</tbody>
</table>

14. Transport information

DOT  UN-No  UN1170
Proper Shipping Name  ETHANOL SOLUTION
Hazard Class  3
Packing Group  II

TDG  UN-No  UN1170
Proper Shipping Name  ETHANOL SOLUTION
Hazard Class  3
Packing Group  II

IATA  UN-No  UN1170
Proper Shipping Name  ETHANOL SOLUTION
15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>200-578-6</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>200-659-6</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl alcohol</td>
<td>67-56-1</td>
<td>3.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories

- Acute Health Hazard: Yes
- Chronic Health Hazard: Yes
- Fire Hazard: Yes
- Sudden Release of Pressure Hazard: No
- Reactive Hazard: No

CWA (Clean Water Act) Not applicable

Clean Air Act

<table>
<thead>
<tr>
<th>Component</th>
<th>HAPS Data</th>
<th>Class 1 Ozone Depleters</th>
<th>Class 2 Ozone Depleters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl alcohol</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
California Proposition 65
This product contains the following proposition 65 chemicals

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>California Prop. 65</th>
<th>Prop 65 NSRL</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>64-17-5</td>
<td>Development (alcoholic beverages only)</td>
<td>-</td>
<td>Developmental Carcinogen</td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>67-56-1</td>
<td>Development</td>
<td>-</td>
<td>Developmental</td>
</tr>
</tbody>
</table>

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Methyl alcohol</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade
Serious risk, Grade 3

16. Other information

Prepared By
Regulatory Affairs
Remel
Tel: 1-800-255-6730

Revision Date
25-Oct-2017
Print Date
25-Oct-2017
Revision Summary
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS