Material Safety Data Sheet

Isopropanol

Section 1 - Chemical Product and Company Identification

MDL No.: Section 1 - Chemical Product and Company Identification

Isopropanol

CAS No.: 95-68-3

Catalog Numbers: 888235001

Synonyms: Isopropanol; Dimethylcarbinol; sec-Propyl alcohol; Rubbing alcohol; Petrol; 1-Methylethanol; 1-Methyl-ethyl alcohol; 2-Hydroxypropanol; Isopropyl alcohol; Propan-2-ol; IPA; 2-Propanol.

Company Identification:

Fishers Scientific

8365 Valley Pike

Middletown, VA 22645-0307

For information in the US, call:

800-528-0494

Emergency (day or night): 800-424-9300

Chemical Name: Isopropanol

Chemical Formula: C₃H₇O

Molecular Weight: 60.07

REL NC: No MCL

Hazard Symbol: X1F, X17

Risk Phrases: X1 36/37

Section 2 - Composition, Information on Ingredients

CAS: 67-63-0

Chemical Name: 2-Propanol

闪点: 13.6°C (56.0°C)

Explosion Limits: 1.0% Vol

Health: Flammability: 4

Relative Toxicity: 10

Medical Information:

Section 3 - Hazard Identification

EMERGENCY OVERVIEW

Warning: Flammable liquid and vapor. Causes respiratory tract irritation. Prolonged or repeated contact causes defatting of the skin, irritation, dryness, and cracking. Causes eye irritation. Hygroscopic (absorbs moisture from the air). May cause central nervous system depression. Inhalation of vapors may cause temporary respiratory tract irritation. Inhalation of vapor may cause drowsiness and diziness. Target organs: Central nervous system, respiratory system, eyes, mucous membranes.

Section 4 - First Aid Measures

Eye: Produces irritation, characterized by a burning sensation, redness, tearing, and possible conjunctivitis. May cause transient corneal injury.

Skin: May cause irritation with pain and itching, especially if the skin is abraded. Isopropanol has a low potential to cause allergic skin reactions; however, rare cases of allergic contact dermatitis have been reported. May be absorbed through intact skin.

Ingestion: Causes gastrointestinal irritation with nausea, vomiting, and diarrhea. May cause kidney damage. May cause central nervous system depression, characterized by excitement, followed by headaches, dizziness, drowsiness, and convulsions. May cause muscle weakness, anorexia, and weakness of the skeletal muscles. This may lead to death due to respiratory failure. Inhalation of high concentrations may cause central nervous system depression, characterized by headache, dizziness, uncoordination and coma. May cause narcotic effects in high concentrations. Causes upper respiratory tract irritation. Inhalation of vapor may cause drowsiness and diziness.

Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis.

Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Clothing before reuse.

Inhalation: 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.

 Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and an emergency shower. Use adequate local or general ventilation to keep airborne concentrations below the permissible exposure limits. Use personal protective equipment as necessary.

Section 5 - Fire Fighting Measures

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH approved or equivalent, and full protective gear. Wet down containers using a high pressure spray to prevent fire exposure or explosion. Use water spray to keep fire-exposed containers cool, and for extinguishing liquid fires. Use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. For small fires, use carbon dioxide, dry chemical, or alcohol-resistant foam. Avoid contact with eyes, skin, clothing. Empty containers retain product residue and can be ignited. Empty containers with residues may not be compatible with materials in new containers. Use non-combustible material to line and store empty containers.

Extinguishing Media:

Water may be ineffective. Do not use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. For small fires, use carbon dioxide, dry chemical, or alcohol-resistant foam. Use non-combustible material to line and store empty containers.

Autoignition Temperature: 760.0°F (404.4°C)

Flash Point: 13.6°C (56.0°C)

Explosion Limits: Lower: 1.0% Vol

Health: Flammability: 4

Relative Toxicity: 10

Section 6 - Stability and Reactivity

Stability: Stable under normal conditions.

Condition to Avoid: Avoid contact with eyes, skin, clothing. Empty containers retain product residue and can be ignited. Avoid contact with incompatible substances. Flammable area. After opening, purge container with nitrogen before re-closing. Avoid contact with incompatible substances. Flammable area.

Incompatibility: Avoid contact with incompatible substances. Flammable area.

Hazardous Decomposition Products: Appropriate protective equipment should be stored away from heat and light and be protected from ignition sources.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Store in a cool, dry area. Keep in a well-ventilated area.

Storage:

Keep out of reach of children. Keep in a well-ventilated area. Keep cool. Do not expose to heat, sparks, or open flames. Use non-combustible material to line and store empty containers.

Section 8 - Exposure Controls/Personal Protective Equipment

Engineering Controls:

Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and an emergency shower. Use adequate local or general ventilation to keep airborne concentrations below the permissible exposure limits. Use personal protective equipment as necessary.

Eye Protection:

Wear chemical splash goggles.

Skin Protection:

Wear appropriate protective clothing to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

4,156
### Physical State and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>alcohol-like</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>33 mm Hg @ 20 deg C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>2.1 (Air)</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>1.7 (n-butyl acetate=1)</td>
</tr>
<tr>
<td>Viscosity</td>
<td>2.27 mPa.s @ 20 C</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>82 deg C @ 760 mmHg (179.6°C)</td>
</tr>
<tr>
<td>Freezing/ Melting Point</td>
<td>-88 deg C</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Miscible</td>
</tr>
<tr>
<td>Specific Gravity Density</td>
<td>0.7850 (water=1)</td>
</tr>
<tr>
<td>CNMHR</td>
<td>66.09</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Section 10 - Stability and Reactivity</td>
</tr>
</tbody>
</table>

### Chemically Reactivity

- **Under normal storage conditions, peroxidizable compounds can form and accumulate peroxides which may explode when subjected to heat or shock. This material is most hazardous when peroxide levels are concentrated by distillation or evaporation. Isopropanol is susceptible to autooxidation and therefore should be classified as peroxidizable.

### Stability and Reactivity

- **Conditions to Avoid:** Light, ignition sources, excess heat, exposure to moist air or water.
- **Incompatibilities with Other Materials:** Strong oxidizing agents, strong acids, strong bases, amines, ammonia, ethylene oxide, isocyanates, acetaldehyde, chlorine, phosgene. Attacked by most plastics, rubbers and coatings, aluminum at high temperatures.
- **Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide.
- **Hazardous Polymerization:** Will not occur.

### RTECS:

- CAS# 67-63-0: NT9250000
- LD50/LC50:
  - RTECS: CAS# 67-63-0: Draize test, rabbit, eye: 100 mg
  - Draize test, rabbit, eye: 100 mg/24 Moderately
  - Draize test, rabbit, skin: 500 mg: Inhalation, rabbit: LC50 = 2000 mg/m3
  - Inhalation, rat: LCL50 = 16000 ppm/8h; Inhalation, rat: LC50 = 72000 mg/m3
  - Oral, mouse: LD50 = 3600 mg/kg; Oral, mouse: LD50 = 3300 mg/kg
  - Oral, rabbit: LD50 = 2600 mg/kg
  - Oral, rabbit: LD50 = 5045 mg/kg; Oral, rat: LD50 = 5000 mg/kg; Skin, rabbit: LD50 = 32000 mg/kg
- Carcinogenicity: 2-Propional 1ARC Group 3 (not classifiable)

### Ecological Information

- **Biodegradability:** None
- **Toxicity:** See actual entry in RTECS for complete information.

### Transport Information

- **US DOT Shipping Name:** ISOPROPOLAN
- **4.158**