1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Isopropyl alcohol  
Product Number : W292907  
Brand : Aldrich  
Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO  63103  
USA  
Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555  
Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956  

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards  
Flammable liquid, Target Organ Effect, Irritant

Other hazards which do not result in classification
May form explosive peroxides.

GHS Classification
Flammable liquids (Category 2)
Skin irritation (Category 3)
Eye irritation (Category 2A)
Specific target organ toxicity - single exposure (Category 3), Central nervous system

GHS Label elements, including precautionary statements

Pictogram

Signal word  Danger

Hazard statement(s)

H225  Highly flammable liquid and vapour.  
H316  Causes mild skin irritation.  
H319  Causes serious eye irritation.  
H336  May cause drowsiness or dizziness.

Precautionary statement(s)

P210  Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P261  Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P305 + P351 + P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard: 2  
Chronic Health Hazard: *  
Flammability: 3
Physical hazards: 0
NFPA Rating
Health hazard: 2
Fire: 3
Reactivity Hazard: 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: 2-Propanol, sec-Propyl alcohol, Isopropyl alcohol, Isopropanol

Formula: C₃H₈O
Molecular Weight: 60.10 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>90 - 100 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>67-63-0</td>
</tr>
<tr>
<td>EC-No.</td>
<td>200-661-7</td>
</tr>
<tr>
<td>Index-No.</td>
<td>603-117-00-0</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Handle and store under inert gas. hygroscopic

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>TWA 200 ppm</td>
<td></td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye &amp; Upper Respiratory Tract irritation Central Nervous System impairment Not classifiable as a human carcinogen</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STEL 400 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye &amp; Upper Respiratory Tract irritation Central Nervous System impairment Not classifiable as a human carcinogen</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TWA 400 ppm 980 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STEL 500 ppm 1,225 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TWA 400 ppm 980 mg/m3</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
</tbody>
</table>

The value in mg/m3 is approximate.

|               | TWA 400 ppm 980 mg/m3 | USA. NIOSH Recommended Exposure Limits |
|               | ST 500 ppm 1,225 mg/m3 | USA. NIOSH Recommended Exposure Limits |

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm  
Break through time: 480 min  
Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact  
Material: Nitrile rubber  
Minimum layer thickness: 0.2 mm  
Break through time: 60 min  
Material tested: Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374  
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the  
supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial  
hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be  
construed as offering an approval for any specific use scenario.

**Eye protection**  
Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate  
government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**  
imperious clothing, Flame retardant antistatic protective clothing. The type of protective equipment must be  
selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**  
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of  
workday.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td><strong>Safety data</strong></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>no data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>-89.5 °C (-129.1 °F) - lit.</td>
</tr>
<tr>
<td>Boiling point</td>
<td>82 °C (180 °F) - lit.</td>
</tr>
<tr>
<td>Flash point</td>
<td>12.0 °C (53.6 °F) - closed cup</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>425 °C (797 °F)</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>425.0 °C (797.0 °F)</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>2 % (V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>12.7 % (V)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>43.2 hPa (32.4 mmHg) at 20.0 °C (68.0 °F)</td>
</tr>
<tr>
<td></td>
<td>58.7 hPa (44.0 mmHg) at 25.0 °C (77.0 °F)</td>
</tr>
<tr>
<td>Density</td>
<td>0.785 g/cm³ at 25 °C (77 °F)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>completely soluble</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: 0.05</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>no data available</td>
</tr>
<tr>
<td>Odour</td>
<td>alcohol-like</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
Vapours may form explosive mixture with air.

**Conditions to avoid**
Heat, flames and sparks. Extremes of temperature and direct sunlight.

**Materials to avoid**
Oxidizing agents, Acid anhydrides, Aluminium, Halogenated compounds, Acids

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

**Oral LD50**
LD50 Oral - rat - 5,045 mg/kg

**Inhalation LC50**
LC50 Inhalation - rat - 8 h - 16000 ppm

**Dermal LD50**
LD50 Dermal - rabbit - 12,800 mg/kg

**Other information on acute toxicity**
no data available

**Skin corrosion/irritation**
Skin - rabbit - Mild skin irritation

**Serious eye damage/eye irritation**
Eyes - rabbit - Eye irritation - 24 h

**Respiratory or skin sensitisation**
no data available

**Germ cell mutagenicity**
no data available

**Carcinogenicity**
This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (2-Propanol)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**
no data available

Teratogenicity

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**
May cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**
no data available

**Aspiration hazard**
no data available

**Signs and Symptoms of Exposure**
Central nervous system depression, prolonged or repeated exposure can cause:, Nausea, Headache, Vomiting, narcosis, Drowsiness, Overexposure may cause mild, reversible liver effects.

**Synergistic effects**
no data available

**Additional Information**
RTECS: NT8050000

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12. ECOLOGICAL INFORMATION

**Toxicity**
Toxicity to fish 
LC50 - Pimephales promelas (fathead minnow) - 9,640.00 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia magna (Water flea) - 5,102.00 mg/l - 24 h
Immobilization EC50 - Daphnia magna (Water flea) - 6,851 mg/l - 24 h
Toxicity to algae
EC50 - Desmodesmus subspicatus (green algae) - > 2,000.00 mg/l - 72 h
EC50 - Algae - > 1,000.00 mg/l - 24 h

**Persistence and degradability**
no data available

**Bioaccumulative potential**
no data available

**Mobility in soil**
no data available

**PBT and vPvB assessment**
no data available

**Other adverse effects**
no data available

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13. DISPOSAL CONSIDERATIONS

**Product**
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**
Dispose of as unused product.
14. TRANSPORT INFORMATION

DOT (US)
- UN number: 1219  Class: 3  Packing group: II
- Proper shipping name: Isopropanol
- Reportable Quantity (RQ):
- Marine pollutant: No
- Poison Inhalation Hazard: No

IMDG
- UN number: 1219  Class: 3  Packing group: II  EMS-No: F-E, S-D
- Proper shipping name: ISOPROPNOL
- Marine pollutant: No

IATA
- UN number: 1219  Class: 3  Packing group: II
- Proper shipping name: Isopropanol

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Target Organ Effect, Irritant

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
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<td>2-Propanol</td>
<td>67-63-0</td>
<td>1987-01-01</td>
</tr>
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</table>

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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<th>Revision Date</th>
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<tbody>
<tr>
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<td>1987-01-01</td>
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</table>

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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