1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: Isopropyl alcohol
Product Number: W292907
Brand: Aldrich
Index-No.: 603-117-00-0
CAS-No.: 67-63-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone: +1 800-325-5832
Fax: +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #: +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Eye irritation (Category 2A), H319

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram: 

Signal word: Danger

Hazard statement(s)
H225: Highly flammable liquid and vapour.
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.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER/doctor if you feel unwell.
If eye irritation persists: Get medical advice/ attention.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
May form explosive peroxides.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>2-Propanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>sec-Propyl alcohol</td>
<td>Isopropyl alcohol</td>
</tr>
<tr>
<td>Isopropanol</td>
<td></td>
</tr>
</tbody>
</table>

| Formula                      | C₃H₈O                        |
| Molecular weight             | 60.10 g/mol                  |
| CAS-No.                      | 67-63-0                      |
| EC-No.                       | 200-661-7                    |
| Index-No.                    | 603-117-00-0                 |

Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>Flam. Liq. 2; Eye Irrit. 2A; STOT SE 3; H225, H319, H336</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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.
4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES
5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES
6.1 Personal precautions, protective equipment and emergency procedures
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. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 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).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE
7.1 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. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
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

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
8.1 Control parameters
Components with workplace control parameters
<table>
<thead>
<tr>
<th>Component</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</td>
<td>200.000000 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remarks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Central Nervous System impairment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper Respiratory Tract irritation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye irritation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Substances for which there is a Biological Exposure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Index or Indices (see BEI® section)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not classifiable as a human carcinogen</td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td></td>
<td>200 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Central Nervous System impairment</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substances for which there is a Biological Exposure Index or Indices</td>
<td></td>
<td></td>
<td>(see BEI® section)</td>
<td></td>
</tr>
<tr>
<td>Not classifiable as a human carcinogen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>400 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>400.000000 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>400.000000 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td>400.000000 ppm 980.000000 mg/m3</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
<td></td>
</tr>
<tr>
<td>The value in mg/m3 is approximate.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td>400.000000 ppm 980.000000 mg/m3</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td></td>
<td>500.000000 ppm 1,225.000000 mg/m3</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
<td></td>
</tr>
<tr>
<td>PEL</td>
<td></td>
<td>400 ppm 980 mg/m3</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
<td></td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>500 ppm 1,225 mg/m3</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
<td></td>
</tr>
</tbody>
</table>

**Biological occupational exposure limits**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Parameters</th>
<th>Value</th>
<th>Biological specimen</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>Acetone</td>
<td>40.0000</td>
<td>Urine</td>
<td>ACGIH - Biological</td>
</tr>
</tbody>
</table>
8.2 Exposure controls

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

**Personal protective equipment**

- **Eye/face 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 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)

- **Body Protection**
  Impervious 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.

- **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).

- **Control of environmental exposure**
  Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- **a) Appearance**
  - Form: liquid
  - Colour: colourless

- **b) Odour**
  alcohol-like

- **c) Odour Threshold**
  No data available

- **d) pH**
  No data available

- **e) Melting point/freezing point**
  Melting point/range: -89.5 °C (-129.1 °F) - lit.

- **f) Initial boiling point and**
  82 °C (180 °F) - lit.
boiling range

- Flash point: 12.0 °C (53.6 °F) - closed cup
- Evaporation rate: 3.0
- Flammability (solid, gas): No data available
- Upper/lower flammability or explosive limits: Upper explosion limit: 12.7 % (V)
  Lower explosion limit: 2 % (V)
- Vapour pressure: 43.2 hPa (32.4 mmHg) at 20.0 °C (68.0 °F)
  58.7 hPa (44.0 mmHg) at 25.0 °C (77.0 °F)
- Vapour density: No data available
- Relative density: 0.785 g/cm³ at 25 °C (77 °F)
- Water solubility: completely soluble
- Partition coefficient: n-octanol/water: log Pow: 0.05
- Auto-ignition temperature: 425.0 °C (797.0 °F)
- Decomposition temperature: No data available
- Viscosity: No data available
- Explosive properties: No data available
- Oxidizing properties: No data available

9.2 Other safety information
- Surface tension: 20.8 mN/m at 25.0 °C (77.0 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity
- No data available

10.2 Chemical stability
- Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year.
- Stable under recommended storage conditions.

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

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

10.5 Incompatible materials
- Oxidizing agents, Acid anhydrides, Aluminium, Halogenated compounds, Acids

10.6 Hazardous decomposition products
- Hazardous decomposition products formed under fire conditions. - Carbon oxides
  Other decomposition products: No data available
  In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

  Acute toxicity
  LD50 Oral - Rat: 5,045 mg/kg
LC50 Inhalation - Rat - 8 h - 16000 ppm
LD50 Dermal - Rabbit - 12,800 mg/kg

No data available

**Skin corrosion/irritation**
Skin - Rabbit
Result: Mild skin irritation

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: 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: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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

No data available

**Specific target organ toxicity - single exposure**
Inhalation, Oral - May cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

**Additional Information**
RTECS: NT8050000

Central nervous system depression, prolonged or repeated exposure can cause:, Nausea, Headache, Vomiting, narcosis, Drowsiness, Overexposure may cause mild, reversible liver effects., Aspiration may lead to:, Lung oedema, Pneumonia

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Kidney - Irregularities - Based on Human Evidence

Kidney - Irregularities - Based on Human Evidence

**12. ECOLOGICAL INFORMATION**

**12.1 Toxicity**

Toxicity to fish
LC50 - Pimephales promelas (fathead minnow) - 9,640.00 mg/l - 96 h

Toxicity to daphnia and other aquatic
EC50 - Daphnia magna (Water flea) - 5,102.00 mg/l - 24 h
invertebrates

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

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No bioaccumulation is to be expected (log Pow <= 4).

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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):
Poison Inhalation Hazard: No

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

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

15. REGULATORY INFORMATION

SARA 302 Components
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>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>1987-01-01</td>
</tr>
</tbody>
</table>

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

Massachusetts Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>1987-01-01</td>
</tr>
</tbody>
</table>
Pennsylvania Right To Know Components  
2-Propanol  
CAS-No.  67-63-0  
Revision Date  1987-01-01

New Jersey Right To Know Components  
2-Propanol  
CAS-No.  67-63-0  
Revision Date  1987-01-01

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

Full text of H-Statements referred to under sections 2 and 3.

Eye Irrit.   Eye irritation  
Flam. Liq.   Flammable liquids  
H225   Highly flammable liquid and vapour.  
H319   Causes serious eye irritation.  
H336   May cause drowsiness or dizziness.  
STOT SE   Specific target organ toxicity - single exposure

HMIS Rating
Health hazard:  2  
Chronic Health Hazard:  *  
Flammability:  3  
Physical Hazard  0

NFPA Rating
Health hazard:  2  
Fire Hazard:  3  
Reactivity Hazard:  0

Further information
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Preparation Information
Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

Version: 5.9  
Revision Date: 05/27/2016  
Print Date: 04/18/2017