

## SAFETY DATA SHEET

Version 5.6  
Revision Date 07/09/2015  
Print Date 11/11/2015

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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Reagent alcohol

Product Number : 362808  
Brand : Aldrich

CAS-No. : 64-17-5

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

Identified uses : Laboratory chemicals, Manufacture 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 # : (314) 776-6555

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**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  
Acute toxicity, Oral (Category 4), H302  
Eye irritation (Category 2A), H319  
Specific target organ toxicity - single exposure (Category 1), H370

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.  
H302 : Harmful if swallowed.  
H319 : Causes serious eye irritation.  
H370 : Causes damage to organs.

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.

|                    |  |
|--------------------|--|
| P260               | Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  |
| P264               | Wash skin thoroughly after handling.   |
| P270               | Do not eat, drink or smoke when using this product.  |
| P280               | Wear protective gloves/ eye protection/ face protection.   |
| P301 + P312 + P330 | IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.   |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.                              |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P307 + P311        | IF exposed: Call a POISON CENTER or doctor/ physician.   |
| P337 + P313        | If eye irritation persists: Get medical advice/ attention.   |
| P370 + P378        | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.   |
| P403 + P235        | Store in a well-ventilated place. Keep cool.   |
| P405               | Store locked up.   |
| P501               | Dispose of contents/ container to an approved waste disposal plant.  |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

Synonyms : Absolute alcohol  
Ethyl alcohol, Reagent alcohol

Formula : C<sub>2</sub>H<sub>6</sub>O  
Molecular weight : 46.07 g/mol

#### Hazardous components

| Component  | Classification  | Concentration    |
|--|---|------------------|
| <b>Ethanol</b>   |   |                  |
| CAS-No. 64-17-5<br>EC-No. 200-578-6<br>Index-No. 603-002-00-5  | Flam. Liq. 2; Eye Irrit. 2A;<br>H225, H319                                  | >= 90 - <= 100 % |
| <b>Methanol</b>  |   |                  |
| CAS-No. 67-56-1<br>EC-No. 200-659-6<br>Index-No. 603-001-00-X<br>Registration number 01-2119433307-44-XXXX | Flam. Liq. 2; Acute Tox. 3;<br>STOT SE 1; H225, H301 +<br>H311 + H331, H370 | >= 5 - < 10 %    |
| <b>2-Propanol</b>  |   |                  |
| CAS-No. 67-63-0<br>EC-No. 200-661-7<br>Index-No. 603-117-00-0  | Flam. Liq. 2; Eye Irrit. 2A;<br>STOT SE 3; H225, H319,<br>H336              | >= 5 - < 10 %    |

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

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. Take victim immediately to hospital. 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

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**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**

Carbon oxides

**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.

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**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.

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**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.

Moisture sensitive. Handle and store under inert gas.

Storage class (TRGS 510): Flammable liquids

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

| Component | CAS-No. | Value  | Control parameters                     | Basis  |
|-----------|---------|--|--|--|
| Ethanol   | 64-17-5 | TWA  | 1,000.000000 ppm                       | USA. ACGIH Threshold Limit Values (TLV)  |
|           | Remarks | Upper Respiratory Tract irritation<br>Confirmed animal carcinogen with unknown relevance to humans   |  |  |
|           |         | TWA  | 1,000 ppm<br>1,900 mg/m3               | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000                    |
|           |         | TWA  | 1,000 ppm<br>1,900 mg/m3               | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
|           |         | The value in mg/m3 is approximate.   |  |  |
|           |         | TWA  | 1,000.000000 ppm<br>1,900.000000 mg/m3 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
|           |         | The value in mg/m3 is approximate.   |  |  |
|           |         | TWA  | 1,000.000000 ppm<br>1,900.000000 mg/m3 | USA. NIOSH Recommended Exposure Limits   |
|           |         | STEL   | 1,000.000000 ppm                       | USA. ACGIH Threshold Limit Values (TLV)  |
|           |         | Upper Respiratory Tract irritation<br>Confirmed animal carcinogen with unknown relevance to humans   |  |  |
| Methanol  | 67-56-1 | TWA  | 200.000000 ppm                         | USA. ACGIH Threshold Limit Values (TLV)  |
|           |         | Headache<br>Nausea<br>Dizziness<br>Eye damage<br>Substances for which there is a Biological Exposure Index or Indices (see BEI® section)<br>Danger of cutaneous absorption |  |  |
|           |         | STEL   | 250.000000 ppm                         | USA. ACGIH Threshold Limit Values (TLV)  |
|           |         | Headache<br>Nausea<br>Dizziness<br>Eye damage<br>Substances for which there is a Biological Exposure Index or Indices (see BEI® section)<br>Danger of cutaneous absorption |  |  |
|           |         | TWA  | 200.000000 ppm<br>260.000000 mg/m3     | USA. NIOSH Recommended Exposure Limits   |
|           |         | Potential for dermal absorption  |  |  |

|            |         |  |  |  |
|------------|---------|--|--|--|
|            |         | ST   | 250.000000<br>ppm<br>325.000000<br>mg/m3   | USA. NIOSH Recommended Exposure Limits   |
|            |         | Potential for dermal absorption  |  |  |
|            |         | TWA  | 200.000000<br>ppm<br>260.000000<br>mg/m3   | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
|            |         | The value in mg/m3 is approximate.   |  |  |
| 2-Propanol | 67-63-0 | TWA  | 200.000000<br>ppm                          | USA. ACGIH Threshold Limit Values (TLV)  |
|            |         | Central Nervous System impairment<br>Upper Respiratory Tract irritation<br>Eye irritation<br>Substances for which there is a Biological Exposure Index or Indices (see BEI® section)<br>Not classifiable as a human carcinogen |  |  |
|            |         | TWA  | 200 ppm                                    | USA. ACGIH Threshold Limit Values (TLV)  |
|            |         | Central Nervous System impairment<br>Upper Respiratory Tract irritation<br>Eye irritation<br>Substances for which there is a Biological Exposure Index or Indices (see BEI® section)<br>Not classifiable as a human carcinogen |  |  |
|            |         | STEL   | 400 ppm                                    | USA. ACGIH Threshold Limit Values (TLV)  |
|            |         | Central Nervous System impairment<br>Upper Respiratory Tract irritation<br>Eye irritation<br>Substances for which there is a Biological Exposure Index or Indices (see BEI® section)<br>Not classifiable as a human carcinogen |  |  |
|            |         | STEL   | 400.000000<br>ppm                          | USA. ACGIH Threshold Limit Values (TLV)  |
|            |         | Central Nervous System impairment<br>Upper Respiratory Tract irritation<br>Eye irritation<br>Substances for which there is a Biological Exposure Index or Indices (see BEI® section)<br>Not classifiable as a human carcinogen |  |  |
|            |         | TWA  | 400.000000<br>ppm<br>980.000000<br>mg/m3   | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
|            |         | The value in mg/m3 is approximate.   |  |  |
|            |         | TWA  | 400.000000<br>ppm<br>980.000000<br>mg/m3   | USA. NIOSH Recommended Exposure Limits   |
|            |         | ST   | 500.000000<br>ppm<br>1,225.000000<br>mg/m3 | USA. NIOSH Recommended Exposure Limits   |

#### Biological occupational exposure limits

| Component | CAS-No. | Parameters | Value | Biological | Basis |
|-----------|---------|------------|-------|------------|-------|
|-----------|---------|------------|-------|------------|-------|

|            |         |  |              | specimen |   |
|------------|---------|--|--------------|----------|---|
| Methanol   | 67-56-1 | Methanol   | 15.0000 mg/l | Urine    | ACGIH - Biological Exposure Indices (BEI) |
|            | Remarks | End of shift (As soon as possible after exposure ceases) |              |          |   |
| 2-Propanol | 67-63-0 | Acetone  | 40.0000 mg/l | Urine    | ACGIH - Biological Exposure Indices (BEI) |
|            |         | End of shift at end of workweek                          |              |          |   |

## 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: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: 30 min

Material tested: Dermatrill® 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.

#### Body Protection

Complete suit protecting against chemicals, 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      |
| b) Odour      | No data available |

|   |   |
|---|---|
| c) Odour Threshold                              | No data available   |
| d) pH   | No data available   |
| e) Melting point/freezing point                 | Melting point/range: -130 °C (-202 °F)                              |
| f) Initial boiling point and boiling range      | 78 °C (172 °F) at 1,013 hPa (760 mmHg)                              |
| g) Flash point                                  | 9 °C (48 °F) - closed cup   |
| h) Evaporation rate                             | No data available   |
| i) Flammability (solid, gas)                    | No data available   |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 24.5 %(V)<br>Lower explosion limit: 3.3 %(V) |
| k) Vapour pressure                              | 59.5 hPa (44.6 mmHg) at 20 °C (68 °F)                               |
| l) Vapour density                               | No data available   |
| m) Relative density                             | 0.785 g/cm <sup>3</sup>   |
| n) Water solubility                             | No data available   |
| o) Partition coefficient: n-octanol/water       | No data available   |
| p) Auto-ignition temperature                    | 362 °C (684 °F)   |
| q) Decomposition temperature                    | No data available   |
| r) Viscosity                                    | No data available   |
| s) Explosive properties                         | No data available   |
| t) Oxidizing properties                         | No data available   |

## 9.2 Other safety information

No data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

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.

### 10.5 Incompatible materials

Aluminium, Acids, Oxidizing agents, Alkali metals, Halogenated compounds, Ammonia, Acid chlorides, Acid anhydrides, Reducing agents, Peroxides

### 10.6 Hazardous decomposition products

Other decomposition products - No data available  
In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

No data available

Inhalation: No data available

Dermal: No data available

No data available

**Skin corrosion/irritation**

No data available

**Serious eye damage/eye irritation**

No data available

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

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

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Central nervous system depression, Gastrointestinal disturbance, Nausea, Dizziness, Headache, narcosis, May cause convulsions.

Stomach - Irregularities - Based on Human Evidence

Kidney - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence (Ethanol)

Stomach - Irregularities - Based on Human Evidence (Methanol)

Kidney - Irregularities - Based on Human Evidence (2-Propanol)

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**12. ECOLOGICAL INFORMATION**

**12.1 Toxicity**

No data available

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**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

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## 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.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 1170      Class: 3      Packing group: II  
Proper shipping name: Ethanol solutions  
Reportable Quantity (RQ):

Poison Inhalation Hazard: No

### IMDG

UN number: 1170      Class: 3      Packing group: II      EMS-No: F-E, S-D  
Proper shipping name: ETHANOL SOLUTION

### IATA

UN number: 1170      Class: 3      Packing group: II  
Proper shipping name: Ethanol solution

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## 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:

|            | CAS-No. | Revision Date |
|------------|---------|---------------|
| Methanol   | 67-56-1 | 2007-07-01    |
| 2-Propanol | 67-63-0 | 1987-01-01    |

### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

|            | CAS-No. | Revision Date |
|------------|---------|---------------|
| Ethanol    | 64-17-5 | 2007-03-01    |
| Methanol   | 67-56-1 | 2007-07-01    |
| 2-Propanol | 67-63-0 | 1987-01-01    |

### Pennsylvania Right To Know Components

|            | CAS-No. | Revision Date |
|------------|---------|---------------|
| Ethanol    | 64-17-5 | 2007-03-01    |
| Methanol   | 67-56-1 | 2007-07-01    |
| 2-Propanol | 67-63-0 | 1987-01-01    |

### New Jersey Right To Know Components

|            | CAS-No. | Revision Date |
|------------|---------|---------------|
| Ethanol    | 64-17-5 | 2007-03-01    |
| Methanol   | 67-56-1 | 2007-07-01    |
| 2-Propanol | 67-63-0 | 1987-01-01    |

### California Prop. 65 Components

WARNING: This product contains a chemical known to the      CAS-No.      Revision Date

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## 16. OTHER INFORMATION

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

|                       |  |
|-----------------------|--|
| Acute Tox.            | Acute toxicity   |
| Eye Irrit.            | Eye irritation   |
| Flam. Liq.            | Flammable liquids                                      |
| H225                  | Highly flammable liquid and vapour.                    |
| H301 + H311 +<br>H331 | Toxic if swallowed, in contact with skin or if inhaled |
| H302                  | Harmful if swallowed.                                  |
| H319                  | Causes serious eye irritation.                         |
| H336                  | May cause drowsiness or dizziness.                     |
| H370                  | Causes damage to organs.                               |
| 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

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