

## SAFETY DATA SHEET

Version 4.10  
Revision Date 05/24/2016  
Print Date 05/16/2018

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

Product name : Propionaldehyde

Product Number : W292303  
Brand : Aldrich  
Index-No. : 605-018-00-8

CAS-No. : 123-38-6

**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)

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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  
Acute toxicity, Inhalation (Category 4), H332  
Skin irritation (Category 2), H315  
Serious eye damage (Category 1), H318  
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335  
Acute aquatic toxicity (Category 3), H402

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 + H332 Harmful if swallowed or if inhaled  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H335 May cause respiratory irritation.  
H402 Harmful to aquatic life.

|                            |  |
|----------------------------|--|
| 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.  |
| P261                       | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.   |
| P264                       | Wash skin thoroughly after handling.   |
| P270                       | Do not eat, drink or smoke when using this product.  |
| P271                       | Use only outdoors or in a well-ventilated area.  |
| P273                       | Avoid release to the environment.  |
| P280                       | Wear protective gloves/ protective clothing/ eye protection/ face protection.  |
| P301 + P312                | IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  |
| P303 + P361 + P353         | IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.                     |
| P304 + P340                | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.                                 |
| P305 + P351 + P338         | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310                       | Immediately call a POISON CENTER/doctor.   |
| P321                       | Specific treatment (see supplemental first aid instructions on this label).  |
| P330                       | Rinse mouth.   |
| P332 + P313                | If skin irritation occurs: Get medical advice/ attention.  |
| P362                       | Take off contaminated clothing and wash before reuse.  |
| P370 + P378                | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  |
| P403 + P233                | Store in a well-ventilated place. Keep container tightly closed.   |
| 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

Stench.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms : Propanal  
Aldehyde C-3

Formula : C<sub>3</sub>H<sub>6</sub>O  
Molecular weight : 58.08 g/mol  
CAS-No. : 123-38-6  
EC-No. : 204-623-0  
Index-No. : 605-018-00-8

#### Hazardous components

| Component       | Classification   | Concentration |
|-----------------|--|---------------|
| <b>Propanal</b> |  |               |
|                 | Flam. Liq. 2; Acute Tox. 4;<br>Skin Irrit. 2; Eye Dam. 1;<br>STOT SE 3; Aquatic Acute 3;<br>H225, H302 + H332, H315,<br>H318, H335, H402 | <= 100 %      |

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

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## 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. 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

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.

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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. Discharge into the environment must be avoided.

### 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.

Recommended storage temperature 2 - 8 °C

Handle and open container with care. Handle and store under inert gas. Air and moisture sensitive.

## 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   |
|-----------|----------|------------------------------------|--------------------|---|
| Propanal  | 123-38-6 | TWA                                | 20.000000 ppm      | USA. ACGIH Threshold Limit Values (TLV)             |
|           | Remarks  | Upper Respiratory Tract irritation |                    |   |
|           |          | TWA                                | 20.000000 ppm      | USA. Workplace Environmental Exposure Levels (WEEL) |

### 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

Tightly fitting safety goggles. Faceshield (8-inch minimum). 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.

##### Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 343 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, 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 AXBEK (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. Discharge into the environment must be avoided.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

|   |   |
|---|---|
| a) Appearance                                   | Form: clear, liquid<br>Colour: colourless                           |
| b) Odour  | Stench.   |
| c) Odour Threshold                              | No data available   |
| d) pH   | No data available   |
| e) Melting point/freezing point                 | Melting point/range: -81 °C (-114 °F) - lit.                        |
| f) Initial boiling point and boiling range      | 46 - 50 °C (115 - 122 °F) - lit.                                    |
| g) Flash point                                  | -40 °C (-40 °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: 16.1 %(V)<br>Lower explosion limit: 2.6 %(V) |
| k) Vapour pressure                              | 343 hPa (257 mmHg) at 20 °C (68 °F)                                 |
| l) Vapour density                               | 2.01 - (Air = 1.0)  |
| m) Relative density                             | 0.805 g/cm <sup>3</sup> at 25 °C (77 °F)                            |
| n) Water solubility                             | completely soluble  |
| o) Partition coefficient: n-octanol/water       | log Pow: 0.83   |
| p) Auto-ignition temperature                    | No data available   |
| 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

|                         |                            |
|-------------------------|----------------------------|
| Surface tension         | 23.4 mN/m at 20 °C (68 °F) |
| Relative vapour density | 2.01 - (Air = 1.0)         |

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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. Extremes of temperature and direct sunlight.

## 10.5 Incompatible materials

Oxidizing agents, Strong bases, Strong reducing agents

## 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

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 1,690 mg/kg  
(OECD Test Guideline 401)

LC50 Inhalation - Rat - 4 h - > 4.6 mg/l  
(OECD Test Guideline 403)

LD50 Dermal - Rabbit - 2,460 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Convulsions or effect on seizure threshold.  
Lungs, Thorax, or Respiration:Dyspnea.

No data available

#### Skin corrosion/irritation

Irritating to skin.

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Risk of serious damage to eyes.

(OECD Test Guideline 405)

#### Respiratory or skin sensitisation

No data available

#### Germ cell mutagenicity

in vitro assay

Other cell types

Result: positive

DNA damage

Ames test

Result: Not mutagenic in Ames Test

Mutagenicity (micronucleus test)

Mouse

Result: In vivo tests did not show any chromosomal changes.

#### Carcinogenicity

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.

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

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

May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: UE0350000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.,  
Cough, Shortness of breath, Headache, Nausea

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 14 mg/l - 96 h

**12.2 Persistence and degradability**

Biodegradability Result: - Readily biodegradable

Ratio BOD/ThBOD 95 %

**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**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic life.

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: 1275 Class: 3 Packing group: II

Proper shipping name: Propionaldehyde

Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

**IMDG**

UN number: 1275 Class: 3 Packing group: II EMS-No: F-E, S-D

Proper shipping name: PROPIONALDEHYDE

**IATA**

UN number: 1275 Class: 3 Packing group: II

Proper shipping name: Propionaldehyde

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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 |
|----------|----------|---------------|
| Propanal | 123-38-6 | 1993-04-24    |

### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

|          | CAS-No.  | Revision Date |
|----------|----------|---------------|
| Propanal | 123-38-6 | 1993-04-24    |

### Pennsylvania Right To Know Components

|          | CAS-No.  | Revision Date |
|----------|----------|---------------|
| Propanal | 123-38-6 | 1993-04-24    |

### New Jersey Right To Know Components

|          | CAS-No.  | Revision Date |
|----------|----------|---------------|
| Propanal | 123-38-6 | 1993-04-24    |

### 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.

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## 16. OTHER INFORMATION

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

|               |                                     |
|---------------|-------------------------------------|
| Acute Tox.    | Acute toxicity                      |
| Aquatic Acute | Acute aquatic toxicity              |
| Eye Dam.      | Serious eye damage                  |
| Flam. Liq.    | Flammable liquids                   |
| H225          | Highly flammable liquid and vapour. |
| H302          | Harmful if swallowed.               |
| H302 + H332   | Harmful if swallowed or if inhaled  |
| H315          | Causes skin irritation.             |
| H318          | Causes serious eye damage.          |
| H332          | Harmful if inhaled.                 |
| H335          | May cause respiratory irritation.   |

### 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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