

## SAFETY DATA SHEET

Version 8.1  
Revision Date 09/11/2021  
Print Date 01/21/2023

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Butyraldehyde

Product Number : B103284  
Brand : Aldrich  
Index-No. : 605-006-00-2  
CAS-No. : 123-72-8

**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 Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

**SECTION 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  
Short-term (acute) aquatic hazard (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 vapor.                                                                                               |
| H319                       | Causes serious eye 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.                                                                            |
| P264                       | Wash skin thoroughly after handling.                                                                                             |
| P273                       | Avoid release to the environment.                                                                                                |
| P280                       | Wear protective gloves/ protective clothing/ eye protection/ face protection.                                                    |
| P303 + P361 + P353         | IF ON SKIN (or hair): Remove/ 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. |
| 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 for extinction.                                            |
| P403 + P235                | Store in a well-ventilated place. Keep cool.                                                                                     |
| P501                       | Dispose of contents/ container to an approved waste disposal plant.                                                              |

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

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                  |                                   |
|------------------|-----------------------------------|
| Synonyms         | : Butanal                         |
| Formula          | : C <sub>4</sub> H <sub>8</sub> O |
| Molecular weight | : 72.11 g/mol                     |
| CAS-No.          | : 123-72-8                        |
| EC-No.           | : 204-646-6                       |
| Index-No.        | : 605-006-00-2                    |

| Component            | Classification                                                 | Concentration |
|----------------------|----------------------------------------------------------------|---------------|
| <b>butyraldehyde</b> |                                                                |               |
|                      | Flam. Liq. 2; Eye Irrit. 2A; Aquatic Acute 3; H225, H319, H402 | <= 100 %      |

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

---

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Consult a physician. Show this material 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

---

## SECTION 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.

---

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors 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.

---

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

#### Advice on protection against fire and explosion

Use explosion-proof equipment. **Advice on protection against fire and explosion**  
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

#### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.  
For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

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.

Stench. Dry residue is explosive.

#### Storage class

Storage class (TRGS 510): 3: Flammable liquids

### 7.3 Specific end use(s)

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

---

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

| Component     | CAS-No.  | Value | Control parameters             | Basis                                               |
|---------------|----------|-------|--------------------------------|-----------------------------------------------------|
| butyraldehyde | 123-72-8 | TWA   | 25 ppm<br>75 mg/m <sup>3</sup> | 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

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.

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 30 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 EC 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

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. Discharge into the environment must be avoided.

---

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                                 |                                              |
|---------------------------------|----------------------------------------------|
| a) Appearance                   | Form: clear, liquid<br>Color: colorless      |
| b) Odor                         | pungent                                      |
| c) Odor Threshold               | No data available                            |
| d) pH                           | 6.0 - 7.0 at 71 g/l at 20 °C (68 °F)         |
| e) Melting point/freezing point | Melting point/range: -96 °C (-141 °F) - lit. |

|    |                                              |                                                                  |
|----|----------------------------------------------|------------------------------------------------------------------|
| f) | Initial boiling point and boiling range      | 75 °C 167 °F - lit.                                              |
| g) | Flash point                                  | -5 °C (23 °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: 8 %(V)<br>Lower explosion limit: 1.8 %(V) |
| k) | Vapor pressure                               | 120 hPa at 20 °C (68 °F)                                         |
| l) | Vapor density                                | 2.49 - (Air = 1.0)                                               |
| m) | Density                                      | 0.8 g/cm <sup>3</sup> at 25 °C (77 °F) - lit.                    |
|    | Relative density                             | 0.81 at 20 °C (68 °F) - OECD Test Guideline 109                  |
| n) | Water solubility                             | 50 g/l at 20 °C (68 °F) - OECD Test Guideline 105 - soluble      |
| o) | Partition coefficient: n-octanol/water       | log Pow: 0.79                                                    |
| p) | Autoignition temperature                     | 190 °C (374 °F) at 1013.0 hPa                                    |
| 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        | 70 mN/m at 20 °C (68 °F) |
| Relative vapor density | 2.49 - (Air = 1.0)       |

---

## SECTION 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

Vapors 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, Strong acids

## 10.6 Hazardous decomposition products

In the event of fire: see section 5

---

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 5,890 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - > 5.46 mg/l

(OECD Test Guideline 403)

Symptoms: Possible damages: , mucosal irritations, Lung edema, Symptoms may be delayed.

LD50 Dermal - Rabbit - 3,560 mg/kg

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irritating to eyes. - 24 h

(Directive 67/548/EEC, Annex V, B.5.)

#### Respiratory or skin sensitization

Buehler Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

#### Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: Micronucleus test

Species: Mouse

Cell type: Bone marrow

Result: positive

Remarks: (ECHA)

#### Carcinogenicity

IARC: No ingredient 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 ingredient 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 ingredient of this product present at levels greater than or equal to 0.1% is

Aldrich - B103284

Page 7 of 10

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 on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

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

**11.2 Additional Information**

RTECS: ES2275000

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

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

---

**SECTION 12: Ecological information**

**12.1 Toxicity**

|                  |                                                                                           |
|------------------|-------------------------------------------------------------------------------------------|
| Toxicity to fish | static test LC50 - Pimephales promelas (fathead minnow) - 25.8 mg/l<br>- 96 h<br>(US-EPA) |
|------------------|-------------------------------------------------------------------------------------------|

|                                                     |                                                                                |
|-----------------------------------------------------|--------------------------------------------------------------------------------|
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia magna (Water flea) - 195 mg/l - 24 h<br>(DIN 38412) |
|-----------------------------------------------------|--------------------------------------------------------------------------------|

**12.2 Persistence and degradability**

|                  |                                                                                                         |
|------------------|---------------------------------------------------------------------------------------------------------|
| Biodegradability | aerobic - Exposure time 5 d<br>Result: 46 - 57 % - Readily biodegradable.<br>(OECD Test Guideline 301C) |
|------------------|---------------------------------------------------------------------------------------------------------|

|                 |           |
|-----------------|-----------|
| Ratio BOD/ThBOD | 28 - 43 % |
|-----------------|-----------|

**12.3 Bioaccumulative potential**

No bioaccumulation is to be expected ( $\log P_{ow} \leq 4$ ).

**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**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

Aldrich - B103284

Page 8 of 10



---

## SECTION 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.

---

## SECTION 14: Transport information

### DOT (US)

UN number: 1129    Class: 3    Packing group: II  
Proper shipping name: Butyraldehyde  
Reportable Quantity (RQ):  
Poison Inhalation Hazard: No

### IMDG

UN number: 1129    Class: 3    Packing group: II    EMS-No: F-E, S-D  
Proper shipping name: BUTYRALDEHYDE

### IATA

UN number: 1129    Class: 3    Packing group: II  
Proper shipping name: Butyraldehyde

---

## SECTION 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 |
|---------------|----------|---------------|
| butyraldehyde | 123-72-8 | 2007-03-01    |

### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard

### Massachusetts Right To Know Components

|               | CAS-No.  | Revision Date |
|---------------|----------|---------------|
| butyraldehyde | 123-72-8 | 2007-03-01    |

### Pennsylvania Right To Know Components

|               | CAS-No. | Revision Date |
|---------------|---------|---------------|
| butyraldehyde | CAS-No. | Revision Date |

**New Jersey Right To Know Components**

butyraldehyde

CAS-No.  
123-72-8Revision Date  
2007-03-01**California Prop. 65 Components**

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

---

**SECTION 16: Other information****Further information**

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact [mlsbranding@sial.com](mailto:mlsbranding@sial.com).

Version: 8.1

Revision Date: 09/11/2021

Print Date: 01/21/2023