

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Benzaldehyde

Product Number : 418099  
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

Target Organ Effect, Harmful by ingestion., Harmful by skin absorption., Skin and respiratory sensitizer, Irritant

##### Target Organs

Central nervous system, Liver, Kidney

##### GHS Classification

Flammable liquids (Category 4)  
Acute toxicity, Oral (Category 4)  
Acute toxicity, Dermal (Category 4)  
Skin irritation (Category 2)  
Eye irritation (Category 2B)  
Respiratory sensitization (Category 1)  
Skin sensitization (Category 1)  
Acute aquatic toxicity (Category 2)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H227 Combustible liquid  
H302 + H312 Harmful if swallowed or in contact with skin  
H315 + H320 Causes skin and eye irritation.  
H317 May cause an allergic skin reaction.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H401 Toxic to aquatic life.

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P280 Wear protective gloves/ protective clothing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.

**HMIS Classification**

**Health hazard:** 2  
**Chronic Health Hazard:** \*  
**Flammability:** 0  
**Physical hazards:** 0

**NFPA Rating**

**Health hazard:** 2  
**Fire:** 0  
**Reactivity Hazard:** 0

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. Causes respiratory tract irritation.  
**Skin** Harmful if absorbed through skin. Causes skin irritation.  
**Eyes** Causes eye irritation.  
**Ingestion** Harmful if swallowed.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : Artificial essential oil of almond  
Formula : C<sub>7</sub>H<sub>6</sub>O  
Molecular Weight : 106.12 g/mol

Component	Concentration
<b>Benzaldehyde</b>	
CAS-No. 100-52-7	-
EC-No. 202-860-4	
Index-No. 605-012-00-5	

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**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.

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**5. FIREFIGHTING MEASURES**

**Conditions of flammability**

Not flammable or combustible.

**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

Under fire conditions, material may decompose to form flammable and/or explosive mixtures in air. Use water spray to cool unopened containers.

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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

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 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. Discharge into the environment must be avoided.

### 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). Keep in suitable, closed containers for disposal.

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## 7. HANDLING AND STORAGE

### Precautions for safe handling

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

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

### Conditions for safe storage

Store under nitrogen. 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.

Air, light, and moisture sensitive.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Benzaldehyde	100-52-7	TWA	2 ppm	USA. Workplace Environmental Exposure Levels (WEEL)
Remarks	Dermal Sensitization Notation			
		STEL	4 ppm	USA. Workplace Environmental Exposure Levels (WEEL)
	Dermal Sensitization Notation			

### 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.

#### Immersion protection

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: > 480 min

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

Splash protection

Material: Chloroprene

Minimum layer thickness: 0.6 mm

Break through time: > 30 min

Material tested:Camapren® (Aldrich Z677493, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, 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 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

Complete suit protecting against chemicals, 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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form	liquid
Colour	colourless

### Safety data

pH	5.9 at 20 °C (68 °F)
Melting point/freezing point	Melting point/range: -26 °C (-15 °F) - lit.
Boiling point	178 - 179 °C (352 - 354 °F) - lit.
Flash point	no data available
Ignition temperature	190 °C (374 °F)
Autoignition temperature	no data available
Lower explosion limit	1.4 %(V)
Upper explosion limit	8.5 %(V)
Vapour pressure	5 hPa (4 mmHg) at 45 °C (113 °F)
Density	1.045 g/cm <sup>3</sup> at 25 °C (77 °F)
Water solubility	slightly soluble
Partition coefficient: n-octanol/water	log Pow: 1.5
Relative vapour density	3.66 - (Air = 1.0)
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

no data available

### Conditions to avoid

Air Exposure to moisture. Light. Heat.  
Heat, flames and sparks.

### Materials to avoid

Strong oxidizing agents, Strong reducing agents, Strong bases, Alkali metals, Aluminium, Iron, phenols, Oxygen

### Hazardous decomposition products

Other decomposition products - no data available

Hazardous decomposition products formed under fire conditions. - Carbon oxides

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

LD50 Oral - rat - 1,300 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Coma.

#### Inhalation LC50

no data available

#### Dermal LD50

LD50 Dermal - rabbit - 1,250 mg/kg

#### Other information on acute toxicity

no data available

### Skin corrosion/irritation

Skin - rabbit - Skin irritation - 24 h

### Serious eye damage/eye irritation

Eyes - rabbit - Mild eye irritation

### Respiratory or skin sensitization

May cause allergic respiratory and skin reactions

### Germ cell mutagenicity

Laboratory experiments have shown mutagenic effects.

### 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.

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

### **Teratogenicity**

no data available

### **Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

### **Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

### **Aspiration hazard**

no data available

### **Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation.
<b>Ingestion</b>	Harmful if swallowed.
<b>Skin</b>	Harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.

### **Signs and Symptoms of Exposure**

Central nervous system depression, Prolonged or repeated exposure to skin causes defatting and dermatitis.

### **Synergistic effects**

no data available

### **Additional Information**

RTECS: CU4375000

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## **12. ECOLOGICAL INFORMATION**

### **Toxicity**

Toxicity to fish	LC50 - Lepomis macrochirus - 1.07 mg/l - 96 h mortality LOEC - Pimephales promelas (fathead minnow) - 0.45 mg/l - 7 d mortality NOEC - Pimephales promelas (fathead minnow) - 0.22 mg/l - 7 d LC50 - Leuciscus idus (Golden orfe) - 62 mg/l - 48 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 50 mg/l - 24 h

### **Persistence and degradability**

Biodegradability	Biotic/Aerobic Result: 95 % - Readily biodegradable.
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### **Bioaccumulative potential**

no data available

### **Mobility in soil**

no data available

### **PBT and vPvB assessment**

no data available

### **Other adverse effects**

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

Toxic to aquatic life.

no data available

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### 13. DISPOSAL CONSIDERATIONS

#### Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

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### 14. TRANSPORT INFORMATION

#### DOT (US)

UN number: 1990 Class: 9 Packing group: III  
Proper shipping name: Benzaldehyde  
Reportable Quantity (RQ):  
Marine pollutant: No  
Poison Inhalation Hazard: No

#### IMDG

UN number: 1990 Class: 9 Packing group: III EMS-No: F-A, S-A  
Proper shipping name: BENZALDEHYDE  
Marine pollutant: No

#### IATA

UN number: 1990 Class: 9 Packing group: III  
Proper shipping name: Benzaldehyde

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### 15. REGULATORY INFORMATION

#### OSHA Hazards

Target Organ Effect, Harmful by ingestion., Harmful by skin absorption., Skin and respiratory sensitizer, 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

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

#### Massachusetts Right To Know Components

	CAS-No.	Revision Date
Benzaldehyde	100-52-7	2007-03-01

#### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Benzaldehyde	100-52-7	2007-03-01

#### New Jersey Right To Know Components

	CAS-No.	Revision Date
Benzaldehyde	100-52-7	2007-03-01

#### 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.

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### 16. OTHER INFORMATION

#### Further information

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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.

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