

## SAFETY DATA SHEET

Version 5.5  
 Revision Date 12/20/2016  
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### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	: Benzaldehyde		
Product Number	: B1334		
Brand	: Sigma-Aldrich		
Product Use	: For laboratory research purposes.		
Supplier	: Sigma-Aldrich Canada Co. 2149 Winston Park Drive OAKVILLE ON L6H 6J8 CANADA	Manufacturer	: Sigma-Aldrich Corporation 3050 Spruce St. St. Louis, Missouri 63103 USA
Telephone	: +1 9058299500		
Fax	: +1 9058299292		
Emergency Phone # (For both supplier and manufacturer)	: +1-703-527-3887 (CHEMTREC)		
Preparation Information	: Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956		

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### Target Organs

Central nervous system, Liver, Kidney

##### WHMIS Classification

B3	Combustible Liquid	Combustible Liquid
D2A	Very Toxic Material Causing Other Toxic Effects	Respiratory sensitiser
D2B	Toxic Material Causing Other Toxic Effects	Moderate skin irritant
		Skin sensitiser
		Mutagen

##### GHS Classification

Flammable liquids (Category 4)  
 Acute toxicity, Oral (Category 4)  
 Acute toxicity, Dermal (Category 4)  
 Skin corrosion/irritation (Category 2)  
 Acute aquatic toxicity (Category 2)

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

Pictogram



Signal word

Warning

Hazard statement(s)

H227	Combustible liquid.
H302 + H312	Harmful if swallowed or in contact with skin
H315	Causes skin irritation.
H401	Toxic to aquatic life.

Precautionary statement(s)

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

P264 smoking.  
 P270 Wash skin thoroughly after handling.  
 P273 Do not eat, drink or smoke when using this product.  
 P280 Avoid release to the environment.  
 P301 + P312 + P330 Wear protective gloves/ eye protection/ face protection.  
 P302 + P352 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.  
 P332 + P313 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.  
 P370 + P378 If skin irritation occurs: Get medical advice/ attention.  
 P403 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
 P501 Store in a well-ventilated place.  
 Dispose of contents/ container to an approved waste disposal plant.

**HMIS Classification**

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

**NFPA Rating**

**Health hazard:** 2  
**Fire:** 2  
**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

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

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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**

Flush eyes with water as a precaution.

**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**

**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 firefighting if necessary.

**Hazardous combustion products****Explosion data - sensitivity to mechanical impact**

No data available

**Explosion data - sensitivity to static discharge**

No data available

**Further information**

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

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. 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.

**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.

Air, light, and moisture sensitive.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Basis
Benzaldehyde	100-52-7	STEV	4.000000 ppm 17.000000 mg/m3	Canada. Ontario OELs
		STEL	4.000000 ppm 17.000000 mg/m3	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
		STEL	4 ppm 17 mg/m3	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.

**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.

#### 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: Chloroprene

Minimum layer thickness: 0.6 mm

Break through time: 35 min

Material tested: Camapren® (KCL 722 / Aldrich Z677493, 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.

### 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.

### Specific engineering controls

Use mechanical exhaust or laboratory fumehood to avoid exposure.

## 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	64 °C (147 °F) - closed cup
Ignition temperature	190 °C (374 °F)
Auto-ignition 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	1.044 g/cm <sup>3</sup> at 20 °C (68 °F)
Water solubility	slightly soluble
Partition coefficient:	log Pow: 1.5

n-octanol/water	
Relative vapour density	3.66 - (Air = 1.0)
Odour	No data available
Odour Threshold	No data available
Evaporation rate	No data available

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## 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 sensitisation

### 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.

## 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.

#### 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

#### WHMIS Classification

B3	Combustible Liquid	Combustible Liquid
D2A	Very Toxic Material Causing Other Toxic Effects	Respiratory sensitiser
D2B	Toxic Material Causing Other Toxic Effects	Moderate skin irritant
		Skin sensitiser
		Mutagen

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

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### 16. OTHER INFORMATION

#### Text of H-code(s) and R-phrases mentioned in Section 3

#### Further information

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