

## MATERIAL SAFETY DATA SHEET

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Version 1.1

## Section 1 - Product and Company Information

Product Name BENZALDEHYDE, 98+%, FCC  
Product Number W212709  
Brand ALDRICH

Company Sigma-Aldrich  
Street Address 3050 Spruce Street  
City, State, Zip, Country SAINT LOUIS MO 63103 US  
Technical Phone: 314 771 5765  
Emergency Phone: 414 273 3850 Ext. 5996  
Fax: 800 325 5052

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
BENZALDEHYDE, FOR MANUFACTURING	100-52-7	No

Formula C7H6O  
Synonyms Almond artificial essential oil \* Artificial almond oil \* Artificial essential oil of almond \* Benzaldehyde FCC \* Benzene carbaldehyde \* Benzenecarbonal \* Benzoic aldehyde \* NCI-C56133 \* Phenylmethanal  
RTECS Number: CU4375000

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Harmful.

Harmful in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact.

Combustible liquid. Readily absorbed through skin. Target organ(s): Central nervous system. Liver.

## HMIS RATING

HEALTH: 3\*

FLAMMABILITY: 2

REACTIVITY: 1

## NFPA RATING

HEALTH: 3

FLAMMABILITY: 2

REACTIVITY: 1

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

## ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

#### INHALATION EXPOSURE

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

#### DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

#### EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

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### Section 5 - Fire Fighting Measures

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#### FLASH POINT

147.2 °F    64 °C    Method: closed cup

#### EXPLOSION LIMITS

Lower: 1.4 %    Upper: 8.5 %

#### AUTOIGNITION TEMP

190 °C

#### FLAMMABILITY

N/A

#### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

#### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Emits toxic fumes under fire conditions.  
Combustible liquid.

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### Section 6 - Accidental Release Measures

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#### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

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### Section 7 - Handling and Storage

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#### HANDLING

User Exposure: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Suitable: Keep tightly closed. Keep away from heat and open

flame. Store under nitrogen.

SPECIAL REQUIREMENTS

Air, light, and moisture sensitive.

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Section 8 - Exposure Controls / PPE

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ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

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Section 9 - Physical/Chemical Properties

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Appearance	Physical State: Liquid Color: Colorless	
Property	Value	At Temperature or Pressure
Molecular Weight	106.12 AMU	
pH	5.9	20 °C
BP/BP Range	177 - 179 °C	
MP/MP Range	-26 °C	
Freezing Point	N/A	
Vapor Pressure	4 mmHg	45 °C
Vapor Density	3.7 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	1.05 g/cm <sup>3</sup>	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	Log Kow: 1.5	
Decomposition Temp.	N/A	
Flash Point	147.2 °F 64 °C	Method: closed cup
Explosion Limits	Lower: 1.4 % Upper: 8.5 %	
Flammability	N/A	
Autoignition Temp	190 °C	
Refractive Index	1.545	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:Slightly.	

N/A = not available

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Section 10 - Stability and Reactivity

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STABILITY

Stable: Stable.

Conditions to Avoid: Sensitive to moisture. Sensitive to air.

Sensitive to light.

Materials to Avoid: Strong oxidizing agents, Strong reducing agents, Strong bases.

#### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

#### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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### Section 11 - Toxicological Information

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#### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: Harmful if absorbed through skin. Readily absorbed through skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled.

Ingestion: Harmful if swallowed.

#### SENSITIZATION

Respiratory: May cause allergic respiratory reaction.

Skin: May cause allergic skin reaction.

#### TARGET ORGAN(S) OR SYSTEM(S)

Central nervous system. Liver. Kidneys.

#### SIGNS AND SYMPTOMS OF EXPOSURE

Exposure can cause: Narcotic effect. CNS depression. Prolonged or repeated exposure to skin causes defatting and dermatitis.

#### TOXICITY DATA

Skin

Rabbit

1,250 mg/kg

LD50

Oral

Rat

1300 mg/kg

LD50

Remarks: Behavioral:Somnolence (general depressed activity).

Behavioral:Coma.

Oral

Mouse

28 mg/kg

LD50

Remarks: Behavioral:Somnolence (general depressed activity).

Behavioral:Tremor. Lungs, Thorax, or Respiration:Other changes.

Intraperitoneal

Mouse

9 MG/KG

LD50

Remarks: Behavioral:Somnolence (general depressed activity).

Behavioral:Tremor. Lungs, Thorax, or Respiration:Other changes.

Subcutaneous

Rabbit

5 GM/KG

LD50

Oral  
Guinea pig  
1000 mg/kg  
LD50  
Remarks: Behavioral:Tremor. Gastrointestinal:Ulceration or  
bleeding from small intestine. Kidney, Ureter, Bladder:Urine  
volume increased.

Oral  
Mammal  
2020 mg/kg  
LD50

#### IRRITATION DATA

Eyes  
Rabbit  
Remarks: Mild irritation effect

Skin  
Rabbit  
500 mg  
24H  
Remarks: Moderate irritation effect

#### CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that has been  
reported to be possibly carcinogenic based on its IARC, ACGIH,  
NTP, or EPA classification.

Species: Mouse  
Route of Application: Oral  
Dose: 154 GM/KG  
Exposure Time: 2Y  
Frequency: C  
Result: Tumorigenic:Neoplastic by RTECS criteria.  
Gastrointestinal:Tumors.

#### NTP CARCINOGEN LIST

Rating: Some evidence.  
Species: Mouse  
Route: Gavage

#### CHRONIC EXPOSURE - MUTAGEN

Result: Laboratory experiments have shown mutagenic effects.

Species: Human  
Dose: 1 MMOL/L  
Cell Type: lymphocyte  
Mutation test: Sister chromatid exchange

Species: Mouse  
Dose: 400 MG/L  
Cell Type: lymphocyte  
Mutation test: specific locus test

Species: Mouse  
Dose: 400 MG/L  
Cell Type: lymphocyte  
Mutation test: Mutation in mammalian somatic cells.

Species: Hamster  
Dose: 1 GM/L  
Cell Type: lung  
Mutation test: Cytogenetic analysis

Species: Hamster  
Dose: 50 MG/L  
Cell Type: ovary  
Mutation test: Sister chromatid exchange

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## Section 12 - Ecological Information

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### ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish  
Species: Leuciscus idus  
Time: 48 h  
Value: 62 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 24 h  
Value: 50 mg/l

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## Section 13 - Disposal Considerations

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### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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## Section 14 - Transport Information

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### DOT

Proper Shipping Name: Benzaldehyde  
UN#: 1990  
Class: 9  
Packing Group: Packing Group III  
Hazard Label: Class 9  
PIH: Not PIH

### IATA

Proper Shipping Name: Benzaldehyde  
IATA UN Number: 1990  
Hazard Class: 9  
Packing Group: III

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## Section 15 - Regulatory Information

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### EU DIRECTIVES CLASSIFICATION

Symbol of Danger: Xn  
Indication of Danger: Harmful.  
R: 22  
Risk Statements: Harmful if swallowed.  
S: 24  
Safety Statements: Avoid contact with skin.

### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Harmful.  
Risk Statements: Harmful in contact with skin and if swallowed.  
Irritating to eyes, respiratory system and skin. May cause

sensitization by inhalation and skin contact.

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US Statements: Combustible liquid. Readily absorbed through skin. Target organ(s): Central nervous system. Liver.

#### UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

#### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

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#### Section 16 - Other Information

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#### DISCLAIMER

Caution: for manufacturing, processing, or repacking. This material is not sterile and has not been pyrogen-tested.

#### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.