

Material Safety Data Sheet

Benzaldehyde

ACC# 00298

Section 1 - Chemical Product and Company Identification

MSDS Name: Benzaldehyde

Catalog Numbers: AC105220000, AC105220010, AC105220025, AC105220050, AC105222500, AC105225000, AC378360000, AC378360010, AC378361000, AC378365000, B240-500

Synonyms: Benzenecarboxaldehyde; Artificial almond oil; Benzene carbaldehyde; Benzoic aldehyde.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
100-52-7	Benzaldehyde	>98	202-860-4

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless to light yellow liquid. Flash Point: 64 deg C.

Warning! Strong reducing agent. Fire and explosion risk in contact with oxidizing agents. Causes eye, skin, and respiratory tract irritation. **Combustible liquid and vapor.** May be harmful if swallowed. May cause central nervous system depression. May cause kidney damage. Light sensitive. Air sensitive.

Target Organs: Kidneys, central nervous system, skin.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation. Allergic reactions have been reported.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. May be harmful if swallowed. Small doses may cause central nervous system depression. Large doses may cause convulsions.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause narcotic effects in high concentration.

Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis. May cause kidney injury.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Powerful reducing agent. Combustible liquid and vapor.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: 64 deg C (147.20 deg F)

Autoignition Temperature: 190 deg C (374.00 deg F)

Explosion Limits, Lower: 1.40%

Upper: 8.5%

NFPA Rating: (estimated) Health: 2; Flammability: 2; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Use water spray to disperse the gas/vapor. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Use and store under nitrogen. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Keep away from heat and flame. Avoid breathing vapor or mist.

Storage: Keep away from sources of ignition. Store in a tightly closed container. Keep under a nitrogen blanket. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Benzaldehyde	none listed	none listed	none listed

OSHA Vacated PELs: Benzaldehyde: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: colorless to light yellow

Odor: bitter-almond

pH: Not available.

Vapor Pressure: 0.127 mm Hg @ 25 deg C

Vapor Density: 3.66 (air=1)

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 179 deg C

Freezing/Melting Point: -56 deg C

Decomposition Temperature: Not available.

Solubility: 3 g/l @ 25°C

Specific Gravity/Density: 1.044 @ 25°C

Molecular Formula: C₇H₆O

Molecular Weight: 106.12

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Oxidizes when exposed to air. Becomes yellow over time.

Conditions to Avoid: High temperatures, light, ignition sources, prolonged exposure to air, confined spaces.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic gases, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 100-52-7: CU4375000

LD50/LC50:

CAS# 100-52-7:

Draize test, rabbit, skin: 500 mg/24H Moderate;

Oral, mouse: LD50 = 28 mg/kg;

Oral, mouse: LD50 = 2020 mg/kg;

Oral, rat: LD50 = 1300 mg/kg;

Oral, rat: LD50 = 2400 mg/kg;

Carcinogenicity:

CAS# 100-52-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: TDLo (Oral, mouse) = 154 gm/kg/2Y-C; Gastrointestinal - tumors

Reproductive Effects: No information found

Mutagenicity: Mutation, mammalian somatic cells (Mouse Lymphocyte) = 400 mg/L. Cytogenetic analysis (Rodent - hamster Lung) = 1 gm/L

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 11 mg/L; 96 Hr.; Unspecified Fish: Bluegill/Sunfish: 1.1 mg/L; 96 Hr.; LC50 Bacteria: *Phytobacterium phosphoreum*: 4.85 mg/L; 30 Minutes; EC50 Fish: Fathead Minnow: 7.61 mg/L; 96 h; LC50 Water flea *Daphnia*: 5 mg/L; 24 Hr.; LC50 No data available.

Environmental: Based upon a measured log Kow of 1.48 and a water solubility of 6950 mg/l at 25 deg C, the BCF for benzaldehyde can be estimated to be 7.8 and 4.2, respectively, these BCF values suggest that the bioconcentration in aquatic organisms is not important. A number of biological screening studies have demonstrated that benzaldehyde is readily biodegradable. Estimated Koc values of 34 and 150 suggest that benzaldehyde will leach readily.

Physical: Benzaldehyde has a BOD: 50%, 10 days; 150%, 5 days.

Other: Benzaldehyde absorbs UV irradiation weakly (extinction coefficient of 0-30/M-cm) in the spectra between 300 and 380 nm.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	BENZALDEHYDE	BENZALDEHYDE
Hazard Class:	9	9
UN Number:	UN1990	UN1990
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 100-52-7 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 100-52-7: fire.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 100-52-7 can be found on the following state right to know lists: New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN

Risk Phrases:

R 22 Harmful if swallowed.

Safety Phrases:

S 24 Avoid contact with skin.

WGK (Water Danger/Protection)

CAS# 100-52-7: 2

Canada - DSL/NDSL

CAS# 100-52-7 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B3, D2B.

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

Canadian Ingredient Disclosure List

CAS# 100-52-7 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information
--

MSDS Creation Date: 5/03/1999

Revision #4 Date: 3/23/2006

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.