

Material Safety Data Sheet Benzaldehyde FCC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Benzaldehyde FCC

Synonyms: Artificial Almond Oil

Chemical Family: Aromatic Aldehyde

Application: The N.F./F.C.C. grade of benzaldehyde is widely used in flavors such as almond and cherry and in various fragrances for soap and toiletries. Benzaldehyde is an F.D.A. sanctioned synthetic flavoring substance (21 CFR § 182.60) generally recognized as safe for foods (GRAS). The Technical grade is a versatile chemical intermediate in the manufacture of pharmaceuticals, dyes, perfume and flavoring chemicals.

Distributed By:
Ingredient Depot

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2. HAZARDS IDENTIFICATION

Potential Acute Health Effects:

Eye Contact: May cause eye irritation.

Skin Contact: May cause skin irritation. May cause skin rashes in sensitive individuals.

Inhalation: High concentrations of vapor may cause irritation of the respiratory tract. May irritate mouth, nose, and throat. May cause central nervous system effects. Central Nervous System Depression: signs/symptoms can include headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness. Respiratory failure may occur.

Ingestion: May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Percentage (W/W)	LD50s and LC50s Route & Species:
Benzaldehyde 100-52-7	100	Oral LD50 Rat = 800 mg/kg Dermal LD50 Rabbit > 1250 mg/kg

Note: No additional remark.

4. FIRST AID MEASURES

Eye Contact: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Get medical attention. Remove contaminated clothing and laundry before reuse.

Inhalation: Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Notes to Physician: Treatment based on sound judgment of physician and individual reactions of patient.

5. FIRE FIGHTING MEASURES

Flash Point: 64 °C / 148 °F

Flash Point Method: Closed cup.

Autoignition Temperature: 192°C /377°F

Flammable Limits in Air (%): Lower: 1.4% Upper: 12.3%

Extinguishing Media: Use DRY chemicals, CO₂, alcohol foam or water spray.

Special Exposure Hazards: Explosion is possible above the upper explosion limit due to partial oxidation of benzaldehyde to benzoic acid. Since benzaldehyde has a low autoignition temperature, avoid exposure to heated surfaces. Finely dispersed benzaldehyde may ignite spontaneously. Rags used to wipe up spills or activated carbon to absorb vapors of benzaldehyde have also been known to ignite spontaneously. Use water spray to cool fire-exposed containers and structures. Avoid spreading burning liquid with water used for cooling.

Hazardous Decomposition/Combustion Materials (under fire conditions): Carbon monoxide. Toxic fumes.

Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment.

NFPA RATINGS FOR THIS PRODUCT ARE: HEALTH 2, FLAMMABILITY 2, INSTABILITY 0

HMIS RATINGS FOR THIS PRODUCT ARE: HEALTH 2, FLAMMABILITY 2, REACTIVITY 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures: Wear appropriate protective equipment.

Environmental Precautionary Measures: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. Consult local authorities.

Procedure for Clean Up: Isolate hazard area and restrict access. Stop leak only if safe to do so. Remove ignition sources and work with non-sparking tools. Small spills: soak up with absorbent material and scoop into containers. Large spills : prevent contamination of waterways. Dike and pump into suitable containers. Clean up residual with absorbent material, place in appropriate container and flush with water.

7. HANDLING AND STORAGE

Handling: For industrial use only. Handle and open containers with care. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid inhalation of chemical. DO NOT handle or store near an open flame, heat, or other sources of ignition. Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. DO NOT pressurize, cut, heat, or weld containers. Empty containers may contain hazardous product residues. Keep the containers closed when not in use. Protect against physical damage. Use appropriate personnel protective equipment. Benzaldehyde has a low autoignition temperature and can be ignited by, for example, exposed low-pressure steam pipes. Rags used to wipe up spills of benzaldehyde or activated carbon used to absorb vapors of benzaldehyde, have been known to ignite spontaneously (auto-oxidation). Care must be taken when disposing of these materials. Clean benzaldehyde soaked rags thoroughly to remove benzaldehyde before discarding. Consider the use of sealable metal containers.

Bulk storage of benzaldehyde should be made under a nitrogen blanket, since benzaldehyde is easily oxidized to benzoic acid on exposure to air. All storage tank openings should be easily accessible for cleaning, since they will have a tendency to plug with benzoic acid. Pressure/vacuum relief devices should be steam traced or jacketed to maintain temperatures above the melting point (122°C).

Since penetration of air during vacuum distillation of benzaldehyde may lead to auto-oxidation, it is important that nitrogen or other suitable inert gas (NOT AIR) be used to "break vacuum". Care should be taken to ensure that in emergency situations, air is not "sucked into" such columns when the vacuum generating device fails or otherwise becomes inoperable.

Storage: Store in a cool, dry, well ventilated area, away from heat and ignition sources. Place away from incompatible materials. Store in accordance with good industrial practices. Check quality before use if stored for more than 6 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

Respiratory Protection: If exposure exceeds occupational exposure limits, use an appropriate NIOSH approved respirator. In case of spill or leak resulting in unknown concentration, use a NIOSH approved supplied air respirator.

Gloves:

Appropriate chemical resistant gloves should be worn.

Skin Protection: Skin contact should be prevented through the use of suitable protective clothing, gloves and footwear, selected for conditions of use and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Eyes: Chemical goggles; also wear a face shield if splashing hazard exists.

Other Personal Protection Data: Ensure that eyewash stations and safety showers are proximal to the work-station location.

Ingredients	Exposure Limit - ACGIH	Exposure Limit - OSHA	Immediately Dangerous to Life or Health - IDLH
Benzaldehyde	Not available.	Not available.	Not Available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: Colorless to pale yellow.

Odor: Characteristic.

pH Not Available.

Specific Gravity: 1.046 @ 77°C

Boiling Point: 179°C /354°F

Freezing/Melting Point: -26°C / -15°F

Vapor Pressure: <1 mmHg @ 68°C

Vapor Density: 3.66

% Volatile by Volume: 100%

Evaporation Rate: 0.04

Solubility: Slightly soluble in water.

VOCs: Not Available.

Viscosity: Not Available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular Weight: 106.1

Other: Not Available.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: Avoid excessive heat, open flames and all ignition sources.

Materials to Avoid: Strong oxidizing agents. Strong bases. Iron. Phenol Aluminum. Brass.

Hazardous Decomposition Products: Carbon monoxide. Phenol. Toxic fumes.

Additional Information:

Before distillation, peroxides should be avoided. Benzaldehyde readily undergoes oxidation by air, particularly in the presence of minute traces of iron or on exposure to light.

11. TOXICOLOGICAL INFORMATION

Principle Routes of Exposure

Ingestion: May be harmful if swallowed.

Skin Contact: May cause skin irritation. May cause skin rashes in sensitive individuals.

Inhalation: High concentrations of vapor may cause irritation of the respiratory tract. May irritate mouth, nose, and throat. May cause central nervous system effects. Central Nervous System Depression: signs/symptoms can include headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness. Respiratory failure may occur.

Eye Contact: May cause eye irritation.

Additional Information: Repeated contact with the skin may cause dermatitis in sensitive individuals.

Acute Test of Product:

Acute Oral LD50: Not Available.

Acute Dermal LD50: Not Available.

Acute Inhalation LC50: Not Available.

Carcinogenicity:

Ingredients	IARC - Carcinogens	ACGIH - Carcinogens
Benzaldehyde	Not listed.	Not listed.

Carcinogenicity Comment: No additional information available.

Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity: Not Available.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

Ingredients	Ecotoxicity - Fish Species Data	Acute Crustaceans Toxicity:	Ecotoxicity - Freshwater Algae Data
Benzaldehyde	0.8 - 1.44 mg/L LC50 (Lepomis macrochirus) 96 h flow-through 10.6 - 11.8 mg/L LC50 (Oncorhynchus mykiss) 96 h flow-through 6.8 - 8.53 mg/L LC50 (Pimephales promelas) 96 h flow-through 12.69 mg/L LC50 (Oncorhynchus mykiss) 96 h static 7.5 mg/L LC50 (Lepomis macrochirus) 96 h static	Not Available.	Not Available.

Other Information:

Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. Spill areas must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Contaminated Packaging: Empty containers should be recycled or disposed of through an approved waste management facility.

14. TRANSPORT INFORMATION

DOT (U.S.):

DOT Shipping Name: BENZALDEHYDE

DOT Hazardous Class 9

DOT UN Number: UN1990

DOT Packing Group: III

DOT Reportable Quantity (lbs): Not Available.

Note: Classified as a Marine Pollutant as per 49 CFR 172.101 - Appendix B.

Marine Pollutant: Not Available.

TDG (Canada):

TDG Shipping Name: BENZALDEHYDE

Hazard Class: 9

UN Number: UN1990

Packing Group: III

Note: No additional remark.

Marine Pollutant: Not Available.

15. REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

U.S. Regulatory Rules

Ingredients	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
Benzaldehyde	Not Listed.	Not Listed.	Not Listed.

California Proposition 65: Not Listed.

MA Right to Know List: Listed.

New Jersey Right-to-Know List: Listed.

Pennsylvania Right to Know List: Listed.

Additional Notes: Not Available.

WHMIS Hazardous Class:
B3 COMBUSTIBLE LIQUIDS
D2B TOXIC MATERIALS



16. OTHER INFORMATION

Additional Information:

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

Disclaimer:

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END OF MSDS