

Material Safety Data Sheet

BENZALDEHYDE

Section 1 - Product Identification

Product Name : Benzaldehyde
CAS No. : 100-52-7
Synonym : Benzenecarboxaldehyde; artificial almond oil; benzene carbaldehyde; benzoic aldehyde
Company Identification : Tradeasia International Pte. Limited
Address :
133 Cecil Street # 12-03 Keck Seng Tower, Singapore
Tel: +65-6227 6365
Fax: +65-6225 6286
Email: contact@chemtradeasia.com

Section 2 – Composition/Information on Ingredients

Substances

Name of substance	Benzaldehyde
Identifiers	
CAS No	100-52-7
Molecular formula	C ₇ H ₆ O
Molar Mass	106.12 g/mol

Section 3 – Hazardous Ingredients & Occupational Exposure Limits

3.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 4), H227
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Dermal (Category 4), H312
Skin irritation (Category 2), H315
Respiratory sensitisation (Category 1), H334
Skin sensitisation (Category 1), H317
Acute aquatic toxicity (Category 2), H401

3.2 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 Causes skin 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)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P322 Specific measures (see supplemental first aid instructions on this label).
P330 Rinse mouth.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235 Store in a well-ventilated place. Keep cool.
P501 Dispose of contents/ container to an approved waste disposal plant.

3.3 Hazards not otherwise classified (HNOC) or not covered by GHS – none

Section 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.

Section 5 – Employee Protection

Extinguishing media - Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture - no data available

Advice for firefighters - Wear self contained breathing apparatus for fire fighting if necessary

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

Section 6 – Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, 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. For personal protection see section 8.

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. Keep in suitable, closed containers for disposal.

Section 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, including any incompatibilities

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.

Section 8 – Exposure Controls/Personal Protection (later)

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face 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 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) 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.

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.

Respiratory protection. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose 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).

Control of environmental exposure. Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Section 9 – Physical and Chemical Properties

Information on basic physical and chemical properties

Physical State: Liquid

Appearance: yellow

Odor: bitter-almond

pH: 5.9

Vapor Pressure: 1 mm Hg @ 26.2C
Vapor Density: 3.65
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 178 deg C
Freezing/Melting Point: -56 deg C
Decomposition Temperature: Not available.
Solubility: Slightly soluble.
Specific Gravity/Density: 1.0415 @ 10C
Molecular Formula: C₆H₅CHO
Molecular Weight: 106.0414

Other information

VOC content: Not applicable
Other properties: Gas/vapour heavier than air at 20°C. Clear. Substance has basic reaction.

Section 10 – Stability and Reactivity

Chemical Stability: Stable.

Conditions to Avoid: High temperatures, incompatible materials, ignition sources.

Incompatibilities with Other Materials: Incompatible with strong oxidizing agents. Oxidizes in air to benzoic acid. Reacts dangerously with performic acid.

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, NIOSH, NTP, or OSHA.

Epidemiology: No information available.

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

Reproductive Effects: No information available.

Neurotoxicity: No information available.

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

Other Studies: Standard Draize Test: Administration onto the skin (rabbit) = 500 mg/24H (Moderate).

Section 12 – Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 =11 mg/L; 96 Hr.; Unspecified Fish: Bluegill/Sunfish: LC50 =1.1-7.6 mg/L; 96 Hr.; Unspecified Water flea LC50 =5.0 mg/L; 24 Hr.; Unspecified Bacteria: Phytobacterium phosphoreum: EC50 =4.85 - 6.11 mg/L; 5, 15, 30 Minutes; Microtox Test, 15 degrees C 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-cu 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

DOT Classification: : Benzaldehyde. Class 9.

Identification: : Benzaldehyde UNNA: 1990 PG: III.

Special Provisions for Transport: Not applicable.

Section 15 – Regulatory Information

1. US Federal regulations

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Not listed on the United States SARA Section 313

None of the chemicals in this material have an RQ.

None of the chemicals in this product have a TPQ.

2. International regulations

CANADA

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

Canada - WHMIS

This product does not have a WHMIS classification.

Canadian Ingredient Disclosure List

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

Exposure Limits

CAS# 100-52-7: OEL-HUNGARY:TWA 5 mg/m³;STEL 10 mg/m³ OEL-RUSSIA:STE
L 5 mg/m³

EU-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.

3. National regulations

No additional information available

4. US State regulations

BENZALDEHYDYE

State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
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Section 16 - Additional Information

References: Not available.

Other Special Considerations: Not available.

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 way shall Tradeasia International Pte. Ltd. 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 Tradeasia International Pte. Ltd. has been advised of the possibility of such damages