

Chemical Safety Data Sheet MSDS / SDS

Benzoic acid SDS

Revision Date:2024-04-25 Revision Number:1

Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8
Section 9	Section 10	Section 11	Section 12	Section 13	Section 14	Section 15	Section 16

SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Product name: Benzoic acid
CAS: 65-85-0

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.
Uses advised against: none

Company Identification

Company: Chemicalbook.in
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SECTION 2: Hazards identification**Classification of the substance or mixture**

Skin irritation, Category 2
Serious eye damage, Category 1

Specific target organ toxicity - repeated exposure, Category 1

GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H315 Causes skin irritation

H318 Causes serious eye damage

H372 Causes damage to organs through prolonged or repeated exposure

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P270 Do not eat, drink or smoke when using this product.

Response

P302+P352 IF ON SKIN: Wash with plenty of water/...

P321 Specific treatment (see ... on this label).

P332+P317 If skin irritation occurs: Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

P317 Get medical help.

P319 Get medical help if you feel unwell.

Storage

none

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Benzoic acid
Common names and synonyms:	Benzoic acid
CAS number:	65-85-0
EC number:	200-618-2
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention .

Most important symptoms/effects, acute and delayed

Dust may be irritating to nose and eyes. At elevated temperatures, fumes may cause irritation of eyes, respiratory system, and skin. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Organic acids and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

If material on fire or involved in fire: Use water in flooding quantities as fog. Solid streams of water may spread fire. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Use foam, dry chemical, or carbon dioxide.

Specific hazards arising from the chemical

Behavior in Fire: Vapor from molten benzoic acid may form explosive mixture with air. Concentrated dust may form explosive mixture. (USCG, 1999)

Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: protective clothing and face shield. Sweep spilled substance into covered plastic containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

Environmental precautions

Personal protection: protective clothing and face shield. Sweep spilled substance into covered plastic containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

Methods and materials for containment and cleaning up

Cover with soda ash or sodium bicarbonate. Mix and add water.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. Closed system, dust explosion-proof electrical equipment and lighting. Prevent deposition of dust. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

The bulk material should be stored in well-closed container in a cool dry place.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

MAK: (respirable fraction): 0.5 mg/m³, 0.1 ppm; peak limitation category: II(4); skin absorption (H); pregnancy risk group: C

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles.

Skin protection

Protective gloves.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Solid. Monoclinic tablets, plates, leaflets.
Colour:	White.
Odour:	Odorless or with a slight benzaldehyde odor
Melting point/freezing point:	122.4 °C.
Boiling point or initial boiling point and boiling range:	249.2 °C. Atm. press.:760 mm Hg.;227 °C. Atm. press.:400 mm Hg.;205.8 °C. Atm. press.:200 mm Hg.
Flammability:	Combustible.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	121°C
Auto-ignition temperature:	1061°F
Decomposition temperature:	no data available
pH:	2.8. Remarks:Saturated solution.
Kinematic viscosity:	1.26 cP at 130 deg C
Solubility:	less than 1 mg/mL at 68° F (NTP, 1992)

Partition coefficient n-octanol/water:	log Pow = 1.88. Remarks: Temperature and pH not reported.
Vapour pressure:	0.001 hPa. Temperature: 20 °C.
Density and/or relative density:	1.321 g/cm ³ . Temperature: 20 °C.; 1.082 g/cm ³ . Temperature: 122.375 °C.; 1.029 g/cm ³ . Temperature: 180 °C.
Relative vapour density:	4.21 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

The solution in water is a weak acid. Reacts with oxidants.

Chemical stability

A 0.1% w/v aqueous solution of benzoic acid has been reported to be stable for at least 8 weeks when stored in polyvinyl chloride bottles, at room temperature.

Possibility of hazardous reactions

Slight, when exposed to heat or flame...Dust explosion possible if in powder or granular form, mixed with air. At high temperature BENZOIC ACID can react with oxidizing reagents.

Conditions to avoid

no data available

Incompatible materials

Undergoes typical reactions of an organic acid, e.g. with alkalis or heavy metals. Preservative activity may be reduced by interaction with kaolin.

Hazardous decomposition products

When heated to decomp it emits acrid smoke and irritating fumes.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Cat oral 2000 mg/kg

Inhalation: LC50 - rat (male/female) - > 12 200 mg/m³ air.

Dermal: LD50 - rabbit (male/female) - > 2 000 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Cancer Classification: Group D Not Classifiable as to Human Carcinogenicity

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. Exposure could cause a non-allergic rash on contact.

STOT-repeated exposure

no data available

Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - 47.3 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: LC50 - *Daphnia magna* - > 100 mg/L - 48 h.

Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - > 33.1 mg/L - 72 h.

Toxicity to microorganisms: IC50 - activated sludge - > 1 000 mg/L - 3 h. Remarks: Respiration rate.

Persistence and degradability

AEROBIC: Benzoic acid is biodegradable under aerobic conditions by bacteria present in crude municipal wastewater at less than or equal to 200 g/cu m.

Bioaccumulative potential

Measured BCF values of <10, 14, and 21 were reported for Golden ide (*Leuciscus idus melanotus*)(1), trout(2), and mosquito fish (*Gambusia affinis*)(3), respectively. According to a classification scheme(4), this BCF range suggests the potential for bioconcentration in aquatic organisms is low(SRC). Bioconcentration factors of <10(1), 100, 138, 1800, 2800(3) and 10(4) have been reported in algae (*Chorella fusca*)(1), algae (*Oedogonium cardiacum*), mosquito larvae (*Culex quinquefasciatus*), daphnia (*Daphnia magna*) and snail (*Physa*), respectively(3).

Mobility in soil

Koc of benzoic acid is estimated as 15(SRC), using a log Kow of 1.87(1) and a regression-derived equation(2). An experimental log Koc of 1.50 (Koc = 31) has been reported, test details not available(3). According to a classification scheme(4), these Koc values suggest that benzoic acid is expected to have very high mobility in soil. The pKa of benzoic acid is 4.20(5), indicating that this compound will exist in anion form in the environment and anions generally do not adsorb more strongly to organic carbon and clay than their neutral counterparts(6). Freundlich adsorption constants of 0.23, 0 and 0 were reported using Ersum sandy till (pH 4.7;

0.25% OC), Tirstrup melt water sand (pH 6.1; 0.09% OC) and Djursland clayey till (pH 7.6; 0.22% OC), respectively, at 6 deg C. Soils were collected in North Sealand and Djursland, Jutland(7). Benzoic acid displayed negligible adsorption when using a montmorillonite (Volclay bentonite, Upton WY) clay(8).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

Environmental hazards

ADR/RID: Yes
IMDG: Yes
IATA: Yes

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:
<http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

The substance begins to sublime at 100°C.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any