Chemical Safety Data Sheet MSDS / SDS

Chlorobenzilate SDS

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

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

Product identifier

Product name: Chlorobenzilate

CAS: 510-15-6

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

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Warning

Hazard statement(s)

H302 Harmful if swallowed
H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P391 Collect spillage.

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:	Chlorobenzilate
Common names and synonyms:	Chlorobenzilate
CAS number:	510-15-6
EC number:	208-110-2
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

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. Give one or two glasses of water to drink. Do NOT induce vomiting. Refer for medical attention .

Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound include central nervous system stimulation, vomiting, diarrhea, paresthesia, excitement, giddiness, fatigue, tremors, convulsions, pulmonary edema, hypothermia, headache, loss of appetite muscular weakness, apprehensive mental state, myocardial toxicity, impotence, infertility and coma. It may also cause hyperexcitability, narcosis, central nervous system depression, kidney damage and liver damage. Other symptoms include muscle pains, ataxia, mild delirium and fever. It may also cause skin irritation. Testicular damage can occur. ACUTE/CHRONIC HAZARDS: This compound is moderately toxic by inhalation. It may be absorbed through the respiratory tract, gastrointestinal tract and skin. It may cause irritation of the skin. When heated to decomposition it emits toxic fumes of chlorides. (NTP, 1992)

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

Skin decontamination. Wash skin with soap and water . Eye contamination should be removed by prolonged flushing of the eye with copious amounts of clean water or saline. If irritation persists, specialized medical treatment should be obtained.

SECTION 5: Firefighting measures

Suitable extinguishing media

Use dry chemical, carbon dioxide, or alcohol foam extinguishers. Vapors are heavier than air and will collect in low areas. Vapors may travel long distances to ignition sources and flashback ...

Specific hazards arising from the chemical

Flash point data for this chemical are not available; however, it is probably combustible. (NTP, 1992)

Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: P2 filter respirator for harmful particles. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: P2 filter respirator for harmful particles. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a POTW is acceptable only after review by the governing authority. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it

must meet Hazardous Material Criteria for disposal.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. 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

Separated from food and feedstuffs, strong oxidants, bases and strong acids.PRECAUTIONS FOR "CARCINOGENS": Storage site should be as close as practicable to lab in which carcinogens are to be used, so that only small quantities required for ... expt need to be carried. Carcinogens should be kept in only one section of cupboard, an explosion-proof refrigerator or freezer (depending on chemicophysical properties ...) that bears appropriate label. An inventory ... should be kept, showing quantity of carcinogen & date it was acquired ... Facilities for dispensing ... should be contiguous to storage area. Chemical Carcinogens

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	Chlorobenzilate			
CAS No.	510-15-6			
	Limit value - Eight hours		**Limit value - Short term**	
	ppm	**mg/m^3**	**ppm**	**mg/m^3**
Hungary	?	PIC	?	?
	Remarks			
Hungary	PIC = Prior Informed Consent , Rotterdam Convention on international trade and hazardeous chemicals and pesticides			

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 spectacles or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	PHYSICAL DESCRIPTION: Viscous yellow liquid or pale yellow crystals. Light brown crystalline solid. (NTP, 1992)
Colour:	Colorless solid (pure)
Odour:	no data available
Melting point/freezing point:	37°C
Boiling point or initial boiling point and boiling range:	452.3°C at 760 mmHg
Flammability:	Combustible. Gives off irritating or toxic fumes (or gases) in a fire. Liquid formulations containing organic solvents may be flammable.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	227.4°C

Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	less than 0.1 mg/mL at 72° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Kow = 4.74
Vapour pressure:	2.2e-06 mm Hg at 68° F (NTP, 1992)
Density and/or relative density:	1.332 g/cm3
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on heating. This produces toxic and corrosive fumes. Reacts with strong acids, bases and strong oxidants. This generates fire hazard.

Chemical stability

no data available

Possibility of hazardous reactions

This chemical may burn but does not easily ignite.CHLOROBENZILATE is hydrolyzed by alkalis and strong acids. Incompatible with lime (NTP, 1992).

Conditions to avoid

no data available

Incompatible materials

Strong acids , strong bases, lime.

Hazardous decomposition products

Emits toxic fumes of /hydrogen chloride/ when heated to decomposition.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 2784-3880 mg/kg

Inhalation: no data available

Dermal: LD50 Rabbit percutaneous >10,000 mg/kg

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

The Carcinogen Assessment Group in EPA's Research and Development Office has evaluated ethyl 4,4-dichlorobenzilate for

carcinogenicity. According to their analysis, the weight of evidence for ethyl 4,4-dichlorobenzilate is group B2, which is based on inadequate evidence in humans and sufficient evidence in animals. As a group B2 chemical, ethyl 4,4-dichlorobenzilate is considered a probable human carcinogen.

Reproductive toxicity

No information is available on the reproductive or developmental effects of chlorobenzilate in humans. Injury to the sperm and atrophy of the testes have been observed in rats exposed to chlorobenzilate in their diet. Teratogenic effects were not observed in the offspring of rats exposed to chlorobenzilate in the diet or in rabbits exposed by gavage.

STOT-single exposure

The substance is irritating to the eyes and skin. The substance may cause effects on the central nervous system. This may result in impaired functions.

STOT-repeated exposure

no data available

Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50; Species: Oncorhynchus mykiss (Rainbow trout, weight 0.8g); Conditions: freshwater, static, 13 deg C, pH 7.1, hardness 44 mg/L CaCO3; Concentration: 750 ug/L for 24 hr /95.5% purity, technical material

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: The rate at which chlorobenzilate degrades in microbial growth media increases when citrate is incorporated(1). This may be due to a reductive decarboxylation process that the citrate stimulates(1). The half-life of chlorobenzilate in two fine sandy soils was estimated to be 1.5-5 weeks following application of 0.5-1.0 ppm; removal was probably microbial(2). It is

decarboxylated to 4,4'-dichlorobenzophenone by a yeast isolated from insecticide treated soil under anaerobic conditions(3,4). In 22 days, 40, 29, and 39% of the (14)C-ring-labeled chlorobenzilate added to sediment-free water samples from 3 fresh water lakes was converted to organic products; no (14)CO2 evolution was detected(5). Addition of sediment to the water samples from the three lakes gave (14)CO2 yields 3.6, 0.0, and 18.3%(5). Chlorobenzilate was metabolized in water from another freshwater lake only when glucose and inorganic nutrients were added and mineralized to (14)CO2 only when sediment was also added to the water(5). Chlorobenzilate, present at 100 mg/L, reached 0% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(6). Half-lives for chlorobenzilate in Lukang silty clay loam and Pincheng clay ranged from 15.1 days at 10 deg C to 10.8 days at 25 deg C; and 169.1 days at 10 deg C to 29.5 days at 25 deg C, respectively(7).

Bioaccumulative potential

Measured BCF values for carp (Cyprinus carpio) ranged from 224 to 586 and 256 to 709 at concentrations of 20 ug/L and 2 ug/L, respectively(1). According to a classification scheme(2), these BCFs suggest the potential for bioconcentration in aquatic organisms is high(SRC).

Mobility in soil

The Koc of chlorobenzilate is estimated as 1,500(SRC), using a log Kow of 4.74(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that chlorobenzilate is expected to have low mobility in soil. Kd values of 26 and 7.6 have been reported for Lukang and Pincheng soils, respectively, at 20 deg C; at 40 deg C, the Kd values reported were 41 and 5.3, respectively(4).

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: UN3077 (For reference only, please check.)
IMDG: UN3077 (For reference only, please check.)
IATA: UN3077 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (For reference only, please check.)
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (For reference only, please check.)
IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 9 (For reference only, please check.)
IMDG: 9 (For reference only, please check.)
IATA: 9 (For reference only, please check.)

Packing group, if applicable

ADR/RID: III (For reference only, please check.)
IMDG: III (For reference only, please check.)
IATA: III (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

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Not Listed.

(PICCS)

Not Listed.

Vietnam National Chemical Inventory

Not Listed.

IECSC)

Not 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 is combustible but no flash point is available in literature.Carrier solvents used in commercial formulations may change physical and toxicological properties.Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

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