

Chemical Safety Data Sheet MSDS / SDS

Benzo[e]acephenanthrylene SDS

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

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

Product name: Benzo[e]acephenanthrylene

CAS: 205-99-2

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**

Carcinogenicity, Category 1B

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

Danger

Hazard statement(s)

H350 May cause cancer

H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P203 Obtain, read and follow all safety instructions before use.

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

P273 Avoid release to the environment.

Response

P318 IF exposed or concerned, get medical advice.

P391 Collect spillage.

Storage

P405 Store locked up.

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:	Benzo[e]acephenanthrylene
Common names and synonyms:	Benzo[e]acephenanthrylene
CAS number:	205-99-2
EC number:	205-911-9
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. Refer for medical attention .

Most important symptoms/effects, acute and delayed

ACUTE/CHRONIC HAZARDS: When heated to decomposition, this compound emits acrid smoke and irritating fumes. (NTP, 1992)

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 if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the 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. Aromatic hydrocarbons and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide. [Sigma-Aldrich; Safety Data Sheet for Benzo]

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

In case of fire in the surroundings, use appropriate extinguishing media.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

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. Do NOT let this chemical enter the environment.

Environmental precautions

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. Do NOT let this chemical enter the environment.

Methods and materials for containment and cleaning up

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. 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: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal. [Sigma-Aldrich; Safety Data Sheet for Benzo]

SECTION 7: Handling and storage

Precautions for safe handling

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

Provision to contain effluent from fire extinguishing. Well closed. Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects. [Sigma-Aldrich; Safety Data Sheet for Benzo

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

MAK: skin absorption (H); carcinogen category: 2; germ cell mutagen group: 3B

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: Needles or yellow fluffy powder. (NTP, 1992)
Colour:	Needles from benzene
Odour:	no data available
Melting point/freezing point:	163-165°C(lit.)
Boiling point or initial boiling point and boiling range:	357°C
Flammability:	no data available
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	-18°C
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	less than 1 mg/mL at 66° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Kow = 5.78

Vapour pressure:	1.81E-08mmHg at 25°C
Density and/or relative density:	1.286g/cm ³
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

NIOSH considers coal tar pitch volatiles to be potential occupational carcinogens. Coal tar pitch volatiles Upon heating, toxic fumes are formed. Decomposes on heating. This produces toxic fumes.

Chemical stability

Stable under recommended storage conditions.[Sigma-Aldrich; Safety Data Sheet for Benzo

Possibility of hazardous reactions

BENZO[B]FLUORANTHENE can react with strong oxidizing agents. May react with electrophiles, peroxides, nitrogen oxides and sulfur oxides (NTP, 1992)

Conditions to avoid

no data available

Incompatible materials

Incompatible materials: Strong oxidizing agents.[Sigma-Aldrich; Safety Data Sheet for Benzo

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions - Carbon oxides.[Sigma-Aldrich; Safety Data Sheet for Benzo

SECTION 11: Toxicological information

Acute toxicity

Oral: no data available

Inhalation: no data available

Dermal: no data available

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

CLASSIFICATION: B2; probable human carcinogen. BASIS FOR CLASSIFICATION: Based on no human data and sufficient data from animal bioassays. Benzo[b]fluoranthene produced tumors in mice after lung implantation, intraperitoneal (i.p.) or subcutaneous (s.c.) injection and skin painting. HUMAN CARCINOGENICITY DATA: None. ANIMAL CARCINOGENICITY DATA: Sufficient.

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

This substance is possibly carcinogenic to humans. May cause genetic damage in humans.

Aspiration hazard

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

SECTION 12: Ecological information

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: *Daphnia magna* (Water Flea) age ~4 days juvenile; Conditions: freshwater, static, 20 deg C, pH 8.0; Concentration: 1024 µg/L for 24 hr; Effect: intoxication, immobilization /99% purity

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: PAHs with four or more rings, such as benzo(b)fluoranthene, are expected to be resistant to biodegradation(1). The biodegradation half-life of benzo(b)fluoranthene was 135 days in sludge-amended soils(2) and 202 days in agricultural soil amended with sewage(3). Benzo(b)fluoranthene in unacclimated sandy loams had a biodegradation half-life of 610 days, while creosote-acclimated soil yielded a biodegradation half-life of about 87 days(4). Field tests of benzo(b)fluoranthene using agricultural soil amended with sewage had biodegradation half-lives of 3.5 and 9 years(5). An unacclimated agricultural soil resulted in roughly 30% biodegradation of benzo(b)fluoranthene in 250 days(6). The biodegradation half-life of benzo(b)fluoranthene was 385 days in a Kidman sandy loam from Utah and 277 days in a McLaurin sandy loam from Mississippi(7).

Bioaccumulative potential

An estimated BCF of 3000 was calculated in fish for benzo(b)fluoranthene(SRC), using a log Kow of 5.78(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF value suggests that the potential of benzo(b)fluoranthene for bioconcentration in aquatic organisms is very high(SRC). Polyaromatic hydrocarbons, including benzo(b)fluoranthene, have been shown to be rapidly metabolized by aquatic organisms(4). Clams placed in the Port of Osaka, Japan to measure bioconcentration in natural seawater, had a BCF value of 2800 over a 7 day exposure period(5). The biota-sediment accumulation factor (BSAF) for benzo(b)fluoranthene determined using oligochaete worm (*Lumbriculus variegatus*) was 0.52 and 0.087 in Lake Erie sediment from Vermilion, OH and Dunkirk, NY, respectively(6). The BSAF of benzo(b)fluoranthene was measured in polychaete (*Nereis diversicolor*) and gastropod (*Hinia reticulata*) exposed to sediment from three harbors in Norway at 0.0057-0.011 and 0.0057-0.007(7).

Mobility in soil

The log K_{oc} value for benzo(b)fluoranthene in 100 soil samples was 6.80-7.96(1). The log K_{oc} value of benzo(b)fluoranthene measured in sediment from Lake Ketelmeer, The Netherlands was 6.55 and 6.11(2). The log K_{oc} values of benzo(b)fluoranthene measured in sediment from San Francisco Bay was 6.26-6.70(3). The log K_{oc} values for benzo(b,k)fluoranthene in 52 sediment samples was 5.61-8.44(4). According to a classification scheme(5), the reported log K_{oc} values suggest that benzo(b)fluoranthene is expected to be immobile in soil.

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

Not Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Not Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Not Listed.

Korea Existing Chemicals List (KECL)

Not 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

Benzo(b)fluoranthene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco. ACGIH recommends environment containing benzo(b)fluoranthene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m³. TLV Note: Exposure by all routes should be carefully controlled to levels as low as possible. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

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