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SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.1
Creation Date: July 15, 2019
Revision Date: April 21, 2024

SECTION 1: Identification

1.1 GHS Product identifier

Product name Benz[a]anthracene

1.2 Other means of identification

Product number CPAH111503
Other names Benz[a]anthracene; 1,2-Benzanthracene; benzo[a]anthracene

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.
Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.
Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou
Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175
Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 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

2.2 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.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration

Benz[a]anthracene	Benz[a]anthracene	56-55-3	200-280-6	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air.

Following skin contact

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

Following eye contact

Rinse with plenty of water (remove contact lenses if easily possible).

Following ingestion

Rinse mouth. Seek medical attention if you feel unwell.

4.2 Most important symptoms/effects, acute and delayed

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

4.3 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 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. Naphthalene and Related Compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

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

5.2 Specific hazards arising from the chemical

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

5.3 Special protective actions for fire-fighters

Use water spray, powder, carbon dioxide, foam. In case of fire in the surroundings, use appropriate extinguishing media.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: complete protective clothing including self-contained breathing apparatus. Wet powder to prevent dusting and ignition. Do NOT let this chemical enter the environment. Vacuum spilled material with specialist equipment. Sweep spilled substance into sealable containers. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Personal protection: complete protective clothing including self-contained breathing apparatus. Wet powder to prevent dusting and ignition. Do NOT let this chemical enter the environment. Vacuum spilled material with specialist equipment. Sweep spilled substance into sealable containers. Then store and dispose of according to local regulations.

6.3 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 Benz

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO contact with oxidizing agents. 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.

7.2 Conditions for safe storage, including any incompatibilities

Separated from oxidizing materials. Store in an area without drain or sewer access. Well closed.Keep container tightly closed in a dry and well-ventilated place.[Sigma-Aldrich; Safety Data Sheet for Benz

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: A2 (suspected human carcinogen); BEI issued.MAK skin absorption (H).MAK: carcinogen category: 2; germ cell mutagen group: 3A

Biological limit values

no data available

8.2 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.

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

Eye/face protection

Wear safety goggles, face shield 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: Colorless leaflets or plates or coarse gold powder with a greenish-yellow fluorescence. May reasonably be expected to be a carcinogen.
Colour	Plates from glacial acetic acid or alcohol
Odour	no data available
Melting point/freezing point	-46°C(lit.)
Boiling point or initial boiling point and boiling range	438°C(lit.)
Flammability	Combustible.
Lower and upper explosion limit/flammability limit	no data available
Flash point	41°C(lit.)
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 68° F (NTP, 1992)
Partition coefficient n-octanol/water	log Kow = 5.76
Vapour pressure	2.1X10-7 mm Hg at 25 deg C
Density and/or relative density	1.19g/cm3
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

NIOSH considers coal tar pitch volatiles to be potential occupational carcinogens. Coal tar pitch volatiles
Reacts with oxidizing substances.

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Dust explosion possible if in powder or granular form, mixed with air.BENZ[A]ANTHRACENE may react vigorously with strong oxidizing agents. Can react exothermically with bases and with diazo compounds. Substitution at the benzene nucleus occurs by halogenation (acid catalyst), nitration, sulfonation, and the Friedel-Crafts reaction.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

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

10.6 Hazardous decomposition products

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

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. Benz[a]anthracene produced tumors in mice exposed by gavage; intraperitoneal, subcutaneous or intramuscular injection; and topical application. Benz[a]anthracene produced mutations in bacteria and in mammalian cells and transformed mammalian cells in culture. HUMAN CARCINOGENICITY DATA: None. ANIMAL CARCINOGENICITY DATA: Sufficient.

Reproductive toxicity

no data available

STOT-single exposure

See Notes.

STOT-repeated exposure

This substance is probably carcinogenic to humans.

Aspiration hazard

A nuisance-causing concentration of airborne particles can be reached quickly when dispersed.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: LC50; Species: Daphnia magna (Water Flea) age <24 hr neonate; Conditions: freshwater, static, 25 deg C, pH 7.9-8.3, hardness 80-100 mg/L CaCO3, alkalinity 57-64 mg/L CaCO3; Concentration: 97.5 ug/L for 48 hr /99% purity
- Toxicity to algae: EC50; Species: Chlorella fusca var. vacuolata (Green Algae) strain 21115, 75000 cells/mL; Conditions: freshwater, static, 28 deg C, pH 6.9; Concentration: 0.06 umol/L for 24 hr (95% confidence interval: 0.0555-0.0655 umol/L); Effect: population growth rate /99% purity
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: Benz(a)anthracene, at a concentration of 0.05 ppm in the presence of 50 ug/L activated sludge, produced <0.1 percent carbon dioxide in 5 days(1). A biodegradation study of benz(a)anthracene, based on theoretical biochemical oxygen demand (BOD) measurements, using an Ashland City activated sludge seed (2,500 mg/L), a Nashville activated sludge seed (2,500 mg/L) and a Franklin sludge seed (2,500 mg/L) and an initial concentration of 500 mg/L benz(a)anthracene, achieved 0.3, 2.1, and 1.6 percent of its theoretical BOD, respectively, after 144 hours; using an Ashland City activated sludge seed (5,000 mg/L), a Nashville activated sludge seed (5,000 mg/L) and a Franklin sludge seed (5,000 mg/L) and an initial concentration of 500 mg/L benz(a)anthracene, benz(a)anthracene achieved 1.0, 1.0, and 5.4 percent of its theoretical BOD, respectively, after 144 hours(2). No biodegradation of benz(a)anthracene (initial concentration 10 ug/L) to carbon dioxide in estuarine water was observed after an incubation period of 48 hours(3).

12.3 Bioaccumulative potential

The log bioaccumulation factor for benz(a)anthracene in lake trout (Salvelinus namaycush) obtained from Lake Superior was 3.98(1). An estimated BCF of 2,940 was calculated in fish for benz(a)anthracene (SRC), using a measured log Kow of 5.76(2) and a regression-derived equation(3). According to a classification scheme(4), this BCF suggests the potential for bioconcentration in aquatic organisms is very high(SRC), provided the compound is not metabolized by the organism(SRC).

12.4 Mobility in soil

Benz(a)anthracene was determined to strongly adsorb to sediment with a Koc range of 545,000 to 1,870,000 in Coyote Creek sediment, Des Moines River sediment, and Searsville Pond sediment(1). According to a recommended classification scheme(2), these experimental

Koc values suggest that benz(a)anthracene is expected to be immobile in soil(SRC). In a modeling study, 55, 71 and 88 percent of the benz(a)anthracene was predicted to be sorbed in a lake, stream, and eutrophic pond respectively(1). 39 percent of the benz(a)anthracene added to the water column of a controlled ecosystem was recovered in the sediment a week later(3). Benz(a)anthracene, which adsorbed to sediments in a microcosm, was mostly (40 to 60 percent) found in surface sections collected 4 to 5 cm below the surface(4). Sandy soil from a former wood impregnation plant and heterogeneous soil from a former tar-oil refinery were found to adsorb 105.8 and 95.7 mg/kg soil benz(a)anthracene, respectively(5). In estuarine water, 53 percent benz(a)anthracene adsorbed on particles after 3 hours. After 3 hours incubation in natural seawater, 59 percent of 3 ug/L was taken up by suspended aggregates of dead phytoplankton cells and bacteria(6).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 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

14.1 UN Number

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

14.2 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.)

14.3 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.)

14.4 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.)

14.5 Environmental hazards

ADR/RID: Yes IMDG: Yes IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
Benz[a]anthracene	Benz[a]anthracene	56-55-3	200-280-6
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.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Not Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Not Listed.

SECTION 16: Other information

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Information on revision

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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

Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.Do NOT take working clothes home.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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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 damage resulting from handling or from contact with the above product.