

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.2
Creation Date: July 15, 2019
Revision Date: August 08, 2025

SECTION 1: Identification

1.1 GHS Product identifier

Product name Dibenz[a,h]anthracene

1.2 Other means of identification

Product number CPAH111504

Other names 1,2:5,6-DIBENZANTHRACENE; Dibenz[a,h]anthracene; Naphtho[1',2':2,3]phenanthrene

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
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Dibenz[a,h]anthracene	Dibenz[a,h]anthracene	53-70-3	200-181-8	100%
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SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Seek medical attention if you feel unwell.

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. Seek medical attention if you feel unwell.

4.2 Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound may include irritation. ACUTE/CHRONIC HAZARDS: This compound is harmful if swallowed or inhaled. It may cause irritation. When heated to decomposition it emits acrid smoke, irritating fumes and toxic fumes of carbon monoxide and carbon dioxide. (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. Aromatic hydrocarbons 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 Dibenz]

5.2 Specific hazards arising from the chemical

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

5.3 Special protective actions for fire-fighters

Use water spray, powder.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into sealable 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.

6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into sealable 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.

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 Dibenz]

SECTION 7: Handling and storage

7.1 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.

7.2 Conditions for safe storage, including any incompatibilities

Well closed. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing. 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 Dibenz]

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

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

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 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: White crystals or pale yellow solid. Sublimes. (NTP, 1992)
Colour	Colorless plates or leaflets /recrystallized/ from acetic acid
Odour	no data available
Melting point/freezing point	266°C(lit.)
Boiling point or initial boiling point and boiling range	524°C(lit.)
Flammability	Combustible.
Lower and upper explosion limit/flammability limit	no data available
Flash point	78°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 66° F (NTP, 1992)
Partition coefficient n-octanol/water	log Kow = 6.50
Vapour pressure	1e-10 mm Hg at 68° F (estimated) (NTP, 1992)
Density and/or relative density	1.232g/cm ³
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

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

This chemical is a combustible solid.DIBENZ[A,H]ANTHRACENE is incompatible with strong oxidizing agents. Is oxidized by chromic acid and by osmium tetroxide (NTP, 1992).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

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

10.6 Hazardous decomposition products

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

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

No data are available in humans. Sufficient evidence of carcinogenicity in animals. OVERALL EVALUATION: Group 2A: The agent is probably carcinogenic to humans.

Reproductive toxicity

no data available

STOT-single exposure

See Notes.

STOT-repeated exposure

The substance may have effects on the skin. This may result in photosensitization. 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: EC50; Species: Daphnia magna (Water flea) about 4 day old juvenile; Conditions: freshwater, static, 20 deg C, pH 8.0, alkalinity 250 mg/L CaCO₃; Concentration: 496 ug/L for 24 hr (95% confidence interval: 360-778 ug/L); Effect: intoxication, immobilization /97% purity
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: In Warburg tests, dibenz(a,h)anthracene reached 96% of its theoretical BOD in 144 hrs using activated sludge from municipal wastewater plants(1). The percent microbial mineralization of dibenz(a,h)anthracene by 6 fresh and 6 ripe composted municipal waste in 10 weeks as measured by (14)CO₂ formation was 0.1-1.4% and 0.8-20.8%, respectively; the average was 0.4% and 12.6%, respectively(2). Half-lives of 18 and 21 days were reported for the degradation (method of degradation unknown) of dibenz(a,h)anthracene in soil systems(3). 20% biodegradation of dibenz(a,h)anthracene was observed in a town gas soil-water slurry reactor using a polynuclear aromatic hydrocarbon-acclimated mixed culture over a period of 5 weeks incubation(4). 30% biodegradation of dibenz(a,h)anthracene was observed after 2 weeks incubation using a mixed aerobic culture in liquid slurry intentionally contaminated with polynuclear aromatic hydrocarbons extracted from a town gas site(4). After 30 days of aeration and mixing in a batch slurry bioremediation process, inoculated with a mixed culture of hydrocarbon-degrading bacteria, the slurry-phase dibenz(a,h)anthracene concentration was reduced from 1,300 ug/kg on day 30 to 1,180 ug/kg on day 60(5). An initial increase in the slurry-phase dibenz(a,h)anthracene concentration observed during the first 30 days of the experiment was attributed to a solubilizing effect resulting from bacterial inoculation of the pollutant soil wash concentrates(5). The percent biodegradation of dibenz(a,h)anthracene by microbes in settled domestic wastewater in original culture, 1st, 2nd and 3rd subculture was (concentration): 82% (1.10 ppm), 82% (1.18 ppm), 82% (1.14 ppm) and 75% (1.22 ppm), respectively. 7 days were allowed between each measurement and subculture(6). Soil contaminated with dibenz(a,h)anthracene from the former gasworks site showed little biodegradation in a pilot scale bioslurry when normalized with anthracene biodegradation. The fraction of dibenz(a,h)anthracene left in soil after degradation relative to anthracene at 3, 7, 24, 29 days was 102, 95, 104, 93%, respectively(7). Additional field bioremediation efforts were also unsuccessful after one year of treatment followed by supercritical fluid extraction (SFE) (7). Dibenz(a,h)anthracene concentration of 12 mg/kg remained the same after 1 year of bioremediation in the field. SFE was not able to remove dibenz(a,h)anthracene from the fast fraction and only reduced the concentration to 10 mg/kg by in the fast/moderate fraction(8).

12.3 Bioaccumulative potential

An estimated BCF of 9000 was calculated in fish for dibenz(a,h)anthracene(SRC), using a log K_{ow} of 6.50(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is very high(SRC), provided the compound is not metabolized by the organism(SRC). However, it may not bioconcentrate in aquatic organisms

which contain microsomal oxidase, such as fish, as this enzyme enables the rapid metabolism of certain polycyclic aromatic hydrocarbons(4). A BCF of 10 was measured in golden ide fish (*Leuciscus idus melanotus*) that were exposed to dibenz(a,h)anthracene (0.05 mg/L) over a 3-day period(5). A measured fish biotransformation half-life of 1.63 days has been reported for dibenz(a,h)anthracene(6).

12.4 Mobility in soil

In sediments, the Koc of dibenz(a,h)anthracene ranged (11 values) from 8.1×10^5 to 3.1×10^6 ; in soil the Koc ranges (3 values) are from 5.7×10^5 to 3.0×10^6 (1). The average Koc in sediments and soil is 2.0×10^6 (1). The Koc of dibenz(a,h)anthracene in 16 historically contaminated sediments ranged from 1.1×10^6 to 4.8×10^7 with a median of 6.6×10^6 (2). According to a classification scheme(3), these Koc values suggest that dibenz(a,h)anthracene is expected to be immobile in soil(SRC). An accumulation factor (concentration of chemical in sludge, ug/g/final concentration of chemical in water, ug/g) of 42,800 was observed for dibenz(a,h)anthracene after 5 days in activated sludge(4).

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
Dibenz[a,h]anthracene	Dibenz[a,h]anthracene	53-70-3	200-181-8
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

Information on revision

Creation Date July 15, 2019
Revision Date August 08, 2025

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

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.