

# SAFETY DATA SHEETS

According to the UN GHS revision 10

Version: 1.1  
Creation Date: July 15, 2024  
Revision Date: February 01, 2025

## SECTION 1: Identification

### 1.1 GHS Product identifier

Product name Dibenzo[A,H]Pyrene

### 1.2 Other means of identification

Product number CPAH111521  
Other names -

### 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

Germ cell mutagenicity, Category 2  
Carcinogenicity, Category 1B

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Danger  
Hazard statement(s) H341 Suspected of causing genetic defects  
H350 May cause cancer

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/...  
Response P318 IF exposed or concerned, get medical advice.  
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 |
|--------------------|---------------------------|------------|-----------|---------------|
| Dibenzo[A,H]Pyrene | Dibenzo[b,def]chrysene    | 189-64-0   | 205-878-0 | ≈ 99%         |

## SECTION 4: First-aid measures

## 4.1 Description of necessary first-aid measures

### If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

### Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

### Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

### Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

## 4.2 Most important symptoms/effects, acute and delayed

Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]: TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. (ERG, 2016)

## 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

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## 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 Dibenzol]

### 5.2 Specific hazards arising from the chemical

Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]: Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.). Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. For electric vehicles or equipment, ERG Guide 147 (lithium ion batteries) or ERG Guide 138 (sodium batteries) should also be consulted. (ERG, 2016)

### 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### 6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures: Avoid dust formation. Avoid breathing vapors, mist or gas. Environmental precautions: Do not let product enter drains. Methods and materials for containment and cleaning up: Sweep up and shovel. Keep in suitable, closed containers for disposal.[Sigma-Aldrich; Safety Data Sheet for Dibenzol]

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## SECTION 7: Handling and storage

### 7.1 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.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.[Sigma-Aldrich; Safety Data Sheet for Dibenzol]

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

|           |                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Component | Dibenzo[b,def]chrysene                                                                                                                                                                                                                                                                                                                                                |
| CAS No.   | 189-64-0                                                                                                                                                                                                                                                                                                                                                              |
|           | Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 0.1 mg/cu m (cyclohexane-extractable fraction). /Coal tar pitch volatiles/<br>NIOSH considers coal tar pitch volatiles to be potential occupational carcinogens. NIOSH usually recommends that occupational exposures to carcinogens be limited to the lowest feasible concentration. /Coal tar pitch volatiles/ |

#### 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 tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

#### Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

#### Thermal hazards

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

|                                                          |                                                                              |
|----------------------------------------------------------|------------------------------------------------------------------------------|
| Physical state                                           | Dibenzo(a,h)pyrene is a yellow odorless crystals or flakes. Water insoluble. |
| Colour                                                   | Golden-yellow plates, recrystallized from xylene or trichlorobenzene         |
| Odour                                                    | Odorless                                                                     |
| Melting point/freezing point                             | 308°C                                                                        |
| Boiling point or initial boiling point and boiling range | 552.3°C at 760 mmHg                                                          |
| Flammability                                             | no data available                                                            |
| Lower and upper explosion limit/flammability limit       | no data available                                                            |
| Flash point                                              | 282°C                                                                        |
| Auto-ignition temperature                                | no data available                                                            |
| Decomposition temperature                                | no data available                                                            |
| pH                                                       | no data available                                                            |
| Kinematic viscosity                                      | no data available                                                            |
| Solubility                                               | In water, 3.5X10 <sup>-5</sup> mg/L at 25 deg C (est)                        |
| Partition coefficient n-octanol/water                    | log Kow = 7.28 (est)                                                         |
| Vapour pressure                                          | 1.12E-11 mmHg at 25°C                                                        |
| Density and/or relative density                          | 1.313 g/cm <sup>3</sup>                                                      |
| 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 Dibenzo

### 10.3 Possibility of hazardous reactions

Vigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic hydrocarbons, such as DIBENZO(A,H)PYRENE, and strong oxidizing agents. They 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

Strong oxidizers. Coal tar pitch volatiles

## 10.6 Hazardous decomposition products

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

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# 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

Group 2B: The agent is possibly carcinogenic to humans.

### Reproductive toxicity

no data available

### STOT-single exposure

no data available

### STOT-repeated exposure

no data available

### Aspiration hazard

no data available

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# SECTION 12: Ecological information

## 12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

## 12.2 Persistence and degradability

AEROBIC: Dibenzo(a,h)pyrene showed no biodegradation after a 29-day incubation period in a bioslurry reactor using contaminated soil from a previous gasworks facility in Sweden(1). In general, polynuclear aromatic hydrocarbons (PAHs) with five or more benzene rings may not biodegrade readily(2). Dibenzo(a,h)pyrene contains six benzene rings. In one biodegradation study, the half-life for the largest PAH studied, benzo(a)pyrene, was 875 days in petroleum-contaminated sediment; rates in pristine sediment were 10 to 400 times slower(3). On this basis, dibenzo(a,h)pyrene is expected to be resistant to biodegradation. PAHs with four or more rings, such as dibenzo(a,h)pyrene, are expected to be resistant to biodegradation(4).

## 12.3 Bioaccumulative potential

An estimated BCF of 9600 was calculated in fish for dibenzo(a,h)pyrene(SRC), using an estimated log Kow of 7.28(1) and a regression-derived equation(1). According to a classification scheme(2), 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(3). Some marine organisms have no detectable aryl hydrocarbons hydroxylase enzyme systems, namely: phytoplankton, certain zooplankton, mussels (*Mytilus edulis*), scallops (*Placopecten* sp), and snails (*Littornia littorea*)(4). Those organisms which lack a metabolic detoxification enzyme system, tend to accumulate polycyclic aromatic hydrocarbons(4). A measured fish biotransformation half-life of 1.1 days has been reported for the analogous compound benzo(a)pyrene(5).

## 12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of dibenzo(a,h)pyrene can be estimated to be  $6.3 \times 10^6$ (SRC). According to a classification scheme(2), this estimated Koc value suggests that dibenzo(a,h)pyrene is expected to be immobile in soil.

## 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: UN2811 (For reference only, please check.) IMDG: UN2811 (For reference only, please check.) IATA: UN2811 (For reference only, please check.)

### 14.2 UN Proper Shipping Name

ADR/RID: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.) IMDG: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.) IATA: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.)

### 14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.) IMDG: 6.1 (For reference only, please check.) IATA: 6.1 (For reference only, please check.)

### 14.4 Packing group, if applicable

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

### 14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

### 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   |
|--------------------------------------------------------------------------|---------------------------|------------|-------------|
| Dibenzo[b,def]chrysene                                                   | Dibenzo[b,def]chrysene    | 189-64-0   | 205-878-0   |
| 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)                               |                           |            | Not 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) |                           |            | Not Listed. |
| Korea Existing Chemicals List (KECL)                                     |                           |            | Not Listed. |

## SECTION 16: Other information

#### Information on revision

Creation Date July 15, 2024  
Revision Date February 01, 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](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/>

**Any questions regarding this SDS, Please send your inquiry to [info@cato-chem.com](mailto:info@cato-chem.com)**

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