

SAFETY DATA SHEETS

According to the UN GHS revision 10

1: Identification

1.1 GHS Product identifier

Product name Benzo[ghi]perylene

1.2 Other means of identification

Product number 191-24-2

Other names Benzo[ghi]perylene

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.

Uses advised against no data available

1.4 Supplier's details

Company Zhongshan Greenrock Technology Co., Ltd.

Address No. 138, Jinsan Avenue, Sanjiao Town, Zhongshan City, Guangdong Province, China

Telephone +86-2087066781

1.5 Emergency phone number

Emergency phone number +86-2087066781

Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

2: Hazard identification

2.1 Emergency Overview

Low-risk substances usually cause only mild irritation or discomfort. Under normal handling conditions, they are unlikely to pose a significant risk to human health or the environment. However, basic safety precautions must be followed.

2.2 GHS Classification

Hazardous to the aquatic environment, acute hazard : Category 1

Hazardous to the aquatic environment, long-term hazard : Category 1

Hazardous to the aquatic environment, long-term hazard : Category 4

2.3 GHS label elements, including precautionary statements

Pictogram(s)**Signal word**

Warning

Hazard statement(s)

H400 Very toxic to aquatic life

H410 Very toxic to aquatic life with long lasting effects

H413 May cause long lasting harmful effects to aquatic life

Precautionary statement(s)**Prevention**

P273 Avoid release to the environment.

Response

P391 Collect spillage.

Storage

no data available

Disposal

P501 Dispose of contents/container to ...

2.4 Physical and chemical

The physical and chemical hazards are low, and they are non-flammable, non-explosive, and non-corrosive. Some substances may be slightly flammable or irritating, but the risk is low.

2.5 Health hazards

May cause mild skin or eye irritation, such as redness and itching. Inhalation or ingestion of small amounts may cause temporary discomfort, but no serious or long-term health effects. No special medical treatment is generally required.

2.6 Environmental hazards

It has a low impact on the environment and is only slightly toxic to aquatic organisms and terrestrial ecosystems. Under normal disposal conditions, it will not cause significant environmental pollution and is highly biodegradable.

2.7 Other hazards which do not result in classification

no data available

3: Composition/information on ingredients

3.1 Substances

| Chemical name | Common names and synonyms | CAS number | EC number | Concentration |
|--------------------|---------------------------|------------|-----------|---------------|
| Benzo[ghi]perylene | Benzo[ghi]perylene | 191-24-2 | 205-883-8 | 99% |

4: First-aid measures

4.1 General advice

Stop contact immediately and rinse the contact area with clean water; if symptoms are mild (such as skin redness, eye stinging), rest and observe; if symptoms persist or worsen, seek medical attention and carry the material SDS

4.2 If inhaled

Move to a ventilated place and breathe fresh air deeply; if a mild cough occurs, drink plenty of warm water to relieve it, no special treatment is required

4.3 In case of skin contact

Rinse with running water for 5-10 minutes. If itching occurs, apply anti-allergic ointment; avoid scratching

4.4 In case of eye contact

Rinse with clean water for 5 minutes and apply artificial tears; if discomfort persists, go to an ophthalmologist for treatment.

4.5 If swallowed

If a small amount is accidentally ingested (such as a mild irritant), drink plenty of water to promote excretion; seek medical attention if nausea occurs, and do not induce vomiting on your own.

4.6 Most important symptoms and effects, both acute and delayed

Mild redness and itching of the skin, brief stinging of the eyes, and a mild cough; no long-term health effects.

4.7 Protection of first-aiders

Rescuers need to wear ordinary gloves and goggles; no special heavy equipment is required, and they can just wash their hands after contact.

4.8 Notes to physician

Inform your doctor of the substance type (e.g., mild irritant, aquatic hazard); treat symptomatically (e.g., anti-allergic, anti-inflammatory); no special treatment is required.

5: Fire-fighting measures

5.1 Unsuitable extinguishing media

Mild irritants: No special contraindications, avoid using fire extinguishing agents that are incompatible with the substance (such as using alkali when encountering acid); Aquatic hazardous substances: Avoid using fire extinguishing agents that pollute water bodies (such as phosphorus-containing foam)

5.2 Specific hazards during fire fighting

The risk of combustion is low, mostly small local fires that are not easy to spread; some substances release slightly irritating gases (such as acetic acid) when burned, which have little impact on health; if the wastewater from fire extinguishing of aquatic hazardous substances enters the water body, it may harm aquatic life.

5.3 Hazardous combustion products

Carbon dioxide, water vapor, slightly irritating gases (such as sulfur dioxide, acetic acid vapor).

5.4 Specific extinguishing methods

For small areas: use dry powder/water to extinguish the fire (if compatible), and use wet cleaning for dust (to prevent dust); for large areas: use foam/water to extinguish the fire, and collect the fire extinguishing wastewater at the same time (to prevent water pollution); after extinguishing the fire, ventilate to dilute the residual gas.

5.5 Special protective equipment for fire-fighters

Wear anti-static work clothes, nitrile gloves, and goggles; wear a dust mask when working with dust; no special heavy equipment is required, and maintain good ventilation during operation.

6: Accidental release measures

6.1 Protective measures for workers

Wear chemical protective clothing (resistant to corresponding chemicals), chemical protective gloves, and goggles; wear a gas mask (organic vapor filter cartridge) for volatile substances; avoid skin contact.

6.2 Environmental protection measure

Set up waterproof cofferdams to prevent leaks from entering rivers/farmland; use oil-absorbing cotton/adsorbents to intercept leaks that have already entered the water body; take samples from contaminated water bodies for testing and assess the ecological impact.

6.3 Containment methods for leaked chemicals

Collect liquids in water-resistant containers (to prevent rain); collect solids in chemical-resistant bags (to prevent rain erosion); and store them in rain-proof and seepage-proof areas after collection.

6.4 Cleanup methods for chemical spills

Small leakage: absorb with aquatic protective adsorption materials; large leakage: transfer to storage tank with corrosion-resistant pump; cleaning water is collected and treated, and direct discharge is prohibited.

6.5 Measures to prevent the spread of leaks

Designate a 10-meter isolation zone and monitor the drainage outlet; add a rain shelter on rainy days; and set up monitoring points in downstream water bodies.

6.6 Container leakage treatment

Minor leaks: seal with waterproof sealant; serious leaks: move to a rainproof area, have professionals handle it, and reuse the container after passing inspection.

6.7 Special considerations

Do not discharge leaked materials/cleaning water directly into water bodies; use phosphorus-free detergents; report the leak to the environmental protection department after treatment.

7: Handling and storage

7.1 Safe storage conditions

Store in a normally ventilated warehouse (natural ventilation or mechanical ventilation, air changes ? 2 times/hour); the container should be ordinary plastic or glass (such as polyethylene bottles, glass bottles) with a sealed lid; the warehouse floor should be ordinary cement with no special anti-corrosion requirements; equipped with basic fire-fighting equipment (such as fire extinguishers, fire sand).

7.2 Storage precautions

Store materials by category (e.g. liquids and solids separated) to avoid confusion; clearly mark the substance name and H code on container labels; check containers for damage monthly and clean up minor leaks immediately; eating and drinking are prohibited in the warehouse, and hands must be washed after work.

7.3 VCI Storage Grade

Level 4 (lowest): Metal containers do not require additional VCI protection and can be stored normally. The humidity in the warehouse is ?70%, which prevents slight rust on ordinary metals without affecting their use. For long-term storage (over 6 months), the dust on the surface of the container needs to be wiped off.

7.4 Recommended storage temperature

10-35?, store at room temperature; avoid extreme temperatures (below -5? or above 40?); deliquescent substances (such as certain salts) should be stored in a dry place with a desiccant (such as silica gel) and replaced regularly (if the label has a recommended storage temperature, follow the label).

7.5 Handling

For precautions see Safety Data Sheet section 2

Advice on safe handling : Work under hood. Do not inhale substance/mixture.

8: Exposure controls/personal protection

8.1 Respiratory protection

When exposed to slightly irritating dust (such as talcum powder) or vapor (such as acetic acid), wear an ordinary dust mask; a respirator is not necessary when ventilation is good.

8.2 Recommended Filter type

For dust, choose Type P1 filter cotton; for slight organic vapor, choose Type A1 filter cartridge; no composite filtration is required, basic protection is sufficient.

8.3 Eye/face protection

Wear ordinary impact-resistant goggles with resin lenses. Wear protective glasses when handling liquids to avoid splashing.

8.4 Skin and body protection

Wear ordinary work clothes (cotton or chemical fiber) and wear a waterproof apron when handling liquids to prevent clothes from getting wet.

8.5 Hand protection

Wear nitrile or latex gloves with a thickness of ≥ 0.2 mm and replace them promptly after use to avoid damage.

8.6 Hygiene measures

Wash your hands with soap and running water after work. If your skin becomes red or itchy, apply moisturizer. Do not rub your eyes with your hands. Wash your clothes normally; no special disinfection requirements are required.

9: Physical and chemical properties and safety characteristics

| | |
|---|---|
| Physical state | Colorless to white crystalline solid |
| Colour | Yellow-green fluorescent leaflets from benzene |
| Odour | no data available |
| Melting point/freezing point | 273°C(lit.) |
| Boiling point or initial boiling point and boiling range | 542°C(lit.) |
| Flammability | Combustible under specific conditions. |
| Lower and upper explosion limit/flammability limit | no data available |
| Flash point | 36°C(lit.) |
| Auto-ignition temperature | no data available |
| Decomposition temperature | Decomposes on heating. This produces toxic fumes. |
| pH | no data available |
| Kinematic viscosity | no data available |
| Solubility | In water, 2.6×10^{-4} mg/L at 25°C |
| Partition coefficient n-octanol/water | $\log K_{ow} = 6.63$ |
| Vapour pressure | 1.12×10^{-9} mmHg at 25°C |
| Density and/or relative density | 1.378g/cm ³ |
| Relative vapour density | no data available |

Particle characteristics no data available

10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Combustible under specific conditions. Vigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic hydrocarbons, such as BENZO[GHI]PERYLENE, 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

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

10.6 Hazardous decomposition products

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

11: Toxicological information

11.1 Acute toxicity

Oral: no data available

Inhalation: no data available

Dermal: no data available

11.2 Skin corrosion/irritation

no data available

11.3 Serious eye damage/irritation

no data available

11.4 Respiratory or skin sensitization

no data available

11.5 Germ cell mutagenicity

no data available

11.6 Carcinogenicity

CLASSIFICATION: D; not classifiable as to human carcinogenicity. BASIS FOR CLASSIFICATION: Based on no human data and inadequate animal data from lung implant, skin-painting and subcutaneous injection bioassays. HUMAN CARCINOGENICITY DATA: None. ANIMAL CARCINOGENICITY DATA: Inadequate.

11.7 Reproductive toxicity

no data available

11.8 STOT-single exposure

no data available

11.9 STOT-repeated exposure

no data available

11.10 Aspiration hazard

no data available

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, 20°C, simulated solar radiation; Concentration: 0.48 nM for 48 hr /98% purity

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: The half-life of benzo(ghi)perylene in Kidman sandy loam soil was determined to be 173 days (oil refinery waste on soil), 600 days (synthetic mixture on soil), and 863 days (1% creosote on soil)(1). After 5 weeks of incubation, benzo(ghi)perylene was approximately 18% degraded from a soil sample collected at a former manufactured gas plant site(2). A study in which polyaromatic hydrocarbon contaminated sludge was applied to 4 soil samples collected in Lancaster, England resulted in biodegradation half-lives of 460, 365, 460, and 535 days for benzo(ghi)perylene(3). A long term field study in which polyaromatic hydrocarbon contaminated sludge was applied to agricultural plots in England resulted in average biodegradation half-lives of 9.1 and 9.5 years for benzo(ghi)perylene(4). Eighty-one and 76% of an initial concentration of 9.96 ug/g benzo(ghi)perylene remained after 240 days in an unacclimated agricultural sandy loam soil incubated at 10 and 20°C, respectively; corresponding half-lives were estimated to be about 650 and 600 days(5). After 1,280 days, 78.3% of an initial concentration of benzo(ghi)perylene at 3.1 ug/g remained in a soil treated with oil sludge at a concentration of 17.0 ug/g(6).

Biodegradation of PAHs having five or more rings, including benzo(ghi)perylene, was slight to non-existent in three soils under field conditions(7). Laboratory studies using sediment and water from the Yellow River, China, known to be contaminated with PAHs, found that biodegradation rates of benzo(ghi)perylene increased as the suspended sediment content of the water was increased(8); the bacteria population on the sediment was found to be far greater than in the water phase alone(8); a biodegradation rate approaching 50% was reached over a 30-day incubation period using the highest sediment contents(8).

12.3 Bioaccumulative potential

An estimated BCF of 11,000 was calculated in fish for benzo(ghi)perylene(SRC), using a log Kow of 6.63(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 measured fish biotransformation half-life of 1.1 days has been reported for the analogous compound benzo(a)pyrene(5). Benzo(ghi)perylene was shown to bioaccumulate in worms exposed to contaminated sediment over a 4 week incubation period, reaching a maximum concentration of 80 ng/g(6).

12.4 Mobility in soil

A measured log Koc values of 6.80 (Koc of 6.3×10^6)(1) and 4.61 (Koc of 4.1×10^4)(2) have been reported for benzo(ghi)perylene. The Koc of benzo(ghi)perylene in 16 historically contaminated sediments ranged from 2.7×10^5 to 8.1×10^8 with a median of 1.3×10^7 (3). According to a classification scheme(4), these Koc values suggest that benzo(ghi)perylene is expected to be immobile in soil. The log Kdoc (partition coefficient for sorption to dissolved organic carbon) of benzo(ghi)perylene was reported to range from 6.93 to 7.08; the log Kpoc (partition coefficient for sorption to particulate organic material) was reported to be 6.8(5). The partition coefficient for sorption to dissolved organic carbon, Kdoc, of benzo(ghi)perylene to water-soluble soil organic matter in loam sand (from Newmarkt, Germany agriculture), clay loam (from Allersdorf, Germany forest), and humic acid (Aldrich) were determined to be 85710, 109570, and 614900, respectively(6).

12.5 Other adverse effects

no data available

13: Disposal considerations

13.1 Disposal methods for waste chemicals

It can be disposed of as ordinary industrial waste or recycled by a qualified unit. Liquid substances can be neutralized to a neutral pH before discharge (subject to compliance with local environmental protection standards). Solid substances can be safely landfilled or incinerated. After cleaning, the container can be recycled as ordinary waste.

13.2 Precautions

Before disposal, the characteristics of the substance must be confirmed to avoid misjudging the risk level. Mildly irritating substances must be strictly separated from food-grade waste. The disposal process must comply with local environmental regulations. Small amounts of residue can be rinsed with water, and the rinse water must be treated. Records of the amount and destination of disposal must be kept for at least three years.

14: Transport information

14.1 UN Number

ADR/RID: UN3077

IMDG: UN3077

IATA: UN3077

14.2 UN Proper Shipping Name

ADR/RID:
ENVIRONMENTALLY
HAZARDOUS SUBSTANCE,
SOLID, N.O.S.

IMDG: ENVIRONMENTALLY
HAZARDOUS SUBSTANCE,
SOLID, N.O.S.

IATA: ENVIRONMENTALLY
HAZARDOUS SUBSTANCE,
SOLID, N.O.S.

14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

14.4 Packing group, if applicable

ADR/RID: III

IMDG: III

IATA: III

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

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 |
|--|---------------------------|------------|-------------|
| Benzo[ghi]perylene | Benzo[ghi]perylene | 191-24-2 | 205-883-8 |
| New Zealand Inventory of Chemicals (NZIoC) | | | Listed. |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS) | | | Not Listed. |
| Vietnam National Chemical Inventory | | | Not Listed. |
| Australian Inventory of Industrial Chemicals (AIIC) | | | Not Listed. |
| Catalogue of Strictly Restricted Toxic Chemicals in China | | | Not Listed. |
| China Catalog of Hazardous chemicals 2015 | | | Not Listed. |
| European INventory of Existing Commercial chemical Substances | | | Not Listed. |
| IARC Monographs on the Evaluation of Carcinogenic Risks to Humans | | | Listed. |
| TSCA Inventory of Chemical Substances | | | Not Listed. |

16: Other information

Information on revision

SDS Creation Date July 1, 2025

SDS Revision Date July 1, 2025

Abbreviations and acronyms in SDS

- 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%

SDS 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/>

Any questions regarding this Safety Data Sheet, Please send your inquiry to sales@MolBest.com

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