SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name	Anthracene

1.2 Other means of identification

Product number	-
Other names	Anthracene; Tricyclo[8.4.0.03,8]tetradeca-1,3,5,7,9,11,13-heptaene; Paranaphthalene

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	Shanghai Yien Chemical Technology Co., Ltd
Address	Building 6, 28 Yingong Road, Fengxian District, Shanghai Chemical Industry Zone, Shanghai, 201400, China
Telephone	+86-400-133-2688

1.5 Emergency phone number

Emergency phone number	+86-400-133-2688
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

Not classified.

2.2 GHS label elements, including precautionary statements

Pictogram(s)	No symbol.
Signal word	No signal word
Hazard statement(s)	none
Precautionary statement(s)	
Prevention	none
Response	none
Storage	none
Disposal	none

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
Anthracene	Anthracene	120-12-7	204-371-1	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

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. Rest. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Inhalation of dust irritates nose and throat. Contact with eyes causes irritation. (USCG, 1999)

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 as 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

To fight fire, use water, foam, carbon dioxide, water spray or mist, dry chemical.

5.2 Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment. Personal protection: P2 filter respirator for harmful particles.

6.2 Environmental precautions

Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment. Personal protection: P2 filter respirator for harmful particles.

6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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 strong oxidants. Well closed.Must be stored in places cool enough to prevent accidental ignition ... Provide adequate ventilation ... Locate storage area well away from areas of fire hazard ... Kept apart from powerful oxidizing agents ...

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

Component	Anthracene
CAS No.	120-12-7
	Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 0.1 mg/cu m (cyclohexane-extractable fraction). /Coal tar pitch volatiles/ NIOSH considers coal tar pitch volatiles to be potential occupational carcinogens. /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 safety spectacles, face shield or eye protection in combination with breathing protection if powder.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation (not if powder), local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Solid. Flakes.
Colour	Light beige.
Odour	Weak aromatic odor
Melting point/freezing point	Ca. 213.9 °C. Atm. press.:Ca. 100 kPa.
Boiling point or initial boiling point and boiling range	342 °C. Atm. press.:1 013 hPa.
Flammability	Combustible.
Lower and upper explosion limit/flammability limit	Lower flammable limit: 0.6% by volume; /No upper limit available/
Flash point	Ca. 121 °C. Atm. press.:Ca. 101 kPa.
Auto-ignition temperature	540 °C. Atm. press.:1 013 hPa.
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 Pow = Ca. 4.65. Temperature:20 °C.
Vapour pressure	0.001 Pa. Temperature:25 °C. Remarks:Standard deviation: +-0.2^-4 Pa.
Density and/or relative density	Ca. 1.126 g/cm³. Temperature:20 °C.
Relative vapour density	6.15 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

80 mg/cu m; NIOSH considers coal tar pitch volatiles to be potential occupational carcinogens. Coal tar pitch volatiles
Decomposes on heating. Decomposes under the influence of strong oxidants. This produces acrid, toxic fume. This generates fire and explosion hazard.

10.2 Chemical stability

Darkens in sunlight

10.3 Possibility of hazardous reactions

COMBUSTIBLE WHEN EXPOSED TO HEAT, FLAME, OR OXIDIZING MATERIALS.Dust explosion possible if in powder or granular form, mixed with air.ANTHRACENE will spontaneously burst into flame on contact with chromic acid, and other strong oxidants.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Anthracene will burst into flame on contact with chromic acid.

10.6 Hazardous decomposition products

Thermal decomposition products include carbon dioxide, carbon monoxide, and organic compounds. Aromatic hydrocarbons and related compounds

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 - rat (male/female) - > 16 000 mg/kg bw.

- Inhalation: no data available
- Dermal: LD50 - rat - > 1 320 mg/kg bw.

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. Inadequate evidence of carcinogenicity in animals. OVERALL EVALUATION: Group 3: The agent is not classifiable as to its carcinogenicity to humans.

Reproductive toxicity

no data available

STOT-single exposure

The substance is mildly irritating to the skin and respiratory tract.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis under the influence of UV light.

Aspiration hazard

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

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - Lepomis sp. - 2.78 µg/L - 96 h. Remarks:Test material.
- Toxicity to daphnia and other aquatic invertebrates: LC50 - Daphnia magna - ca. 36 µg/L - 48 h.
- Toxicity to algae: NOEC - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - 1.5 - 1.7 µg/L - 22 h.
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: The biodegradability of anthracene with natural sediments and natural esturine waters has been studied. The biodegradation of anthracene in aquatic media is controlled by the temperature, oxygen content and acclimatization or nonacclimatization of the microorganisms. Higher biodegradation rates were observed at 30 deg C than at 20 and 10 deg C. The biodegradation process was found to be aerobic and higher oxygen concentration up to a certain optimum value tended to increase the oxidation rates. Similarly, the biodegradation rates were reported to be faster with acclimatized microorganisms. The incubation of anthracene with intertidal sediment slurries for a reasonable period of time (approx 1 month) not only produces the mineralization product carbon dioxide but also produces intermediate metabolites A large portion of the initial material or its intermediate metabolites (which could not be identified because (14)carbon counting of the combustion products of residue was used as the method of quantification) remained cellular bound.

12.3 Bioaccumulative potential

BCFs were measured in the following aquatic species: Goldfish, 162(1); Gambusia (fish), 1029(2); Rainbow trout, 4400 to 9200(3); Daphnia pulex, 759 to 912(4,5); Chlorella fusca variety vacuolata (green algae), 7760(6); Golden orfe, 912(7); Pontoporeia hoyi (scud), 17,000(8); and midge (Chironomousiparius), 46.7(9). A BCF of 7300 was measured in guppies, Poecilia reticulata, in static bioconcentration experiments(10). BCF values of 1660 to 2820 and 903 to 2710 were determined in carp using flow-through conditions and anthracene concns of 15 and 1.5 ug/L, respectively(11). According to a classification scheme(12), these BCFs suggest that bioconcentration in aquatic organisms ranges from moderate to very high(SRC). The BCF in Daphnia magna was found to decrease with increasing concn of Aldrich humic acids: BCF (dissolved organic carbon, mg/L), 607 (0.2) and 319 (2.0); however, this difference was not considered significant due to the large sample variance(13). Aldrich humic acids in water did not significantly alter Daphnia magna accumulation of anthracene: BCF (dissolved organic carbon, mg/L), 389 (0.3), 362 (1.5), and 340 (5.7)(13). Depuration half-lives of 57 and 63 hours relative to contaminated and clean water, respectively, were measured in Zebrafish, Brachydanio rerio, exposed to (14)C-labeled anthracene adsorbed on sediment(14).

12.4 Mobility in soil

The possibility of leaching of anthracene from soil to groundwater will depend on soil type. The Koc value for anthracene is 26,000. This indicates that anthracene will be adsorped strongly to soil and the compound may degrade before it reaches groundwater. Filtration of polluted surface water containing anthracene through sandy soil at a residence time of 100 days did not completely eliminate anthracene in the filtered water. The passage of anthracene through the soil was explained as a breakthrough of the chemical because of the saturation of active sorption sites.

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
Anthracene	Anthracene	120-12-7	204-371-1
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			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019
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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/

Any questions regarding this SDS, Please send your inquiry to sds@xixisys.com

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