ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

Fluoranthene

Revision Date:2026-05-31 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name	: Fluoranthene
CBnumber	: CB3123401
CAS	: 206-44-0
EINECS Number	: 205-912-4
Synonyms	: fluoranthene,fluoranthen

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	: For R&D use only. Not for medicinal, household or other use.
Uses advised against	: none

Company Identification

Company	: Chemicalbook
Address	: Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone	: 010-86108875

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

Label elements

Pictogram(s)

Signal word	Danger

Hazard statement(s)

H225 Highly Flammable liquid and vapour

H302 Harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

H336 May cause drowsiness or dizziness

H351 Suspected of causing cancer

H370 Causes damage to organs

H373 May cause damage to organs through prolonged or repeated exposure

H410 Very toxic to aquatic life with long lasting effects

H412 Harmful to aquatic life with long lasting effects

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P264 Wash skin thouroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P281 Use personal protective equipment as required.

P311 Call a POISON CENTER or doctor/physician.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.

P501 Dispose of contents/container to.....

Prevention

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

Response

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P391 Collect spillage.

Storage

none

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.

Other hazards

no data available

SECTION 3: Composition/information on ingredients

Substance

Product name	: Fluoranthene
Synonyms	: fluoranthene,fluoranthen

CAS	: 206-44-0
EC number	: 205-912-4
MF	: C16H10
MW	: 202.25

SECTION 4: First aid measures

Description of 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.

Most important symptoms and effects, both acute and delayed

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

Indication of any immediate medical attention and special treatment needed

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: Firefighting measures

Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

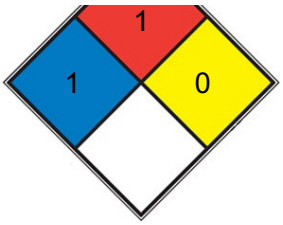
Specific Hazards Arising from the Chemical

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

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

NFPA 704



■	HEALTH	1	Exposure would cause irritation with only minor residual injury (e.g. acetone, sodium bromate, potassium chloride)
■	FIRE	1	Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. mineral oil, ammonia)
■	REACT	0	Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium,N2)
□	SPEC. HAZ.		

SECTION 6: Accidental release measures

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.

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.

Methods and materials for containment and cleaning up

Adsorption by activated carbon.

SECTION 7: Handling and storage

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.

Conditions for safe storage, including any incompatibilities

Storage conditions shall be controlled to prevent overheating and pressure buildup in containers of coal tar products. Transfer and storage systems shall be designed and operated to prevent blockage by condensed coal tar products. Coal tar products

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	Fluoranthene
CAS No.	206-44-0
	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. 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

Exposure controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures

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

Information on basic physicochemical properties

Physical state	Crystalline Powder, Crystals and/or Chunks
Colour	Yellow or yellow-green to gray-beige
Odour	no data available
Melting point/freezing point	320°C(dec.)(lit.)
Boiling point or initial boiling point and boiling range	384°C(lit.)
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	88°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 64° F (NTP, 1992)

Partition coefficient n-octanol/water	log Kow = 5.16
Vapour pressure	1.73E-05mmHg at 25°C
Density and/or relative density	1.252 at 32° F (NTP, 1992)
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

Reactivity

NIOSH considers coal tar pitch volatiles to be potential occupational carcinogens. Coal tar pitch volatiles

Chemical stability

Does not undergo photooxidation in organic solvents under fluorescent light or sunlight; resistant to photodecomposition

Possibility of hazardous reactions

Combustible when exposed to heat or flameVigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic hydrocarbons, such as FLUORANTHENE, 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.

Conditions to avoid

no data available

Incompatible materials

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 2000 mg/kg bw (1270-3130)
- 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: D; not classifiable as to human carcinogenicity. BASIS FOR CLASSIFICATION: Based on no human data and inadequate data from animal bioassays. HUMAN CARCINOGENICITY DATA: None. ANIMAL CARCINOGENICITY DATA: Inadequate.

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50; Species: /Lepomis macrochirus/ (Bluegill); Conditions: static; Concentration: 3,980 ug/L for 96 hr
Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water Flea) age 8-9 days, clone F, female; Conditions: freshwater, renewal, 20 deg C; Concentration: 104.38 ug/L for about 3 days (95% confidenceinterval: 70.82-131.08 ug/L); Effect: growth, decreased biomass /98% 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: 0.17 umol/L for 24 hr (95% confidence interval: 0.153-0.201 umol/L); Effect: population, decreased population growth rate /98% purity
Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: Laboratory studies show that fluoranthene can be substantially mineralized in sediments containing indigenous microorganisms; major metabolites include fluoranthene trans-2,3-dihydrodiol, and 8 and 9-hydroxyfluoranthene trans-2,3-dihydrodiols(1). In shake flask studies, an initial fluoranthene concentration of 16.2 ug/mL was reduced to 7.6 ug/mL following 2 weeks incubation in contaminated groundwater from the American Creosote Works Superfund site, Pensacola, FL(2). In a pilot wastewater treatment plant, no fluoranthene was lost due to biodegradation(3). The presence of the anionic surfactant SDS was found to enhance the biodegradation of fluoranthene(4). Mixed results were reported in a static biodegradability test employing a domestic wastewater inoculum where 100% and 0% of the fluoranthene was degraded in four successive weekly subcultures at concentrations of 5 and 10 mg/L, respectively(5). Fluoranthene removal from the waste water of six municipal waste water treatment plants along the Rhine River in The Netherlands avgd 95%(6).

Bioaccumulative potential

The BCF of fluoranthene in sunfish was determined to range between 2,640-6,110(1). In a 21 day bioconcentration test in a flow through tank,

the log BCF in rainbow trout was 2.58 (BCF = 380)(2). A 28 day experiment in a flow through tank detected a log BCF of 3.60 (BCF = 3,981) after 7 days in fathead minnows; depuration occurred in 2 days(3). According to a classification scheme(4), the BCF values in sunfish, rainbow trout and fathead minnows suggest that the potential for bioconcentration in aquatic organisms is high to very high(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(5). The BCF for fluoranthene in the clam Crassostrea virginica was 10,000 from 8 days exposure to 0.004 ppm fluoranthene via the overlying water column(6). Bioconcentration factors (ratio between tissue and sediment concentrations) of 5.7 and 12.0 were measured in Polychaete sp. and Capitella capitata(7). The BCF of fluoranthene in crayfish was determined to range between 1,520-3,510(1). A mean BCF of 76,696 was measured in the fresh-water amphipod Pontoporeia hoyi(8). When oysters were suspended in oil treated enclosures contaminated with fluoranthene dissolved in Prudhoe crude oil, the log BCF was 4.09 after 2 days exposure; after the oysters were transferred to clean water, depuration half-life was 5 days(9).

Mobility in soil

The measured log Koc for fluoranthene following 15 days of incubation in Oakland, Mixed and Red Hook sediments was determined to be 4.67 to 5.28, 4.72 to 5.47, and 4.47 to 4.62, respectively(1). The average log Koc value for fluoranthene in sediment from Brown's Lake, MS, and Hamlet City Lake, NC after six months incubation was reported to be 4.51 and 5.05, respectively(2). Sorption coefficients for fluoranthene obtained during 48 hour batch experiments using two lake sediments with an organic carbon content of 1.87 and 2.07%, and a high chemical concentration were 2600 and 2700, respectively(3). The log Koc values for fluoranthene on three soils from Germany and one from China were determined to be 4.81, 4.65, 4.80, and 4.83, respectively(4). The log Kdoc (partition coefficient for sorption to dissolved organic carbon) of fluoranthene was reported to range from 5.12 to 5.22; the log Kpoc (partition coefficient for sorption to particulate organic material was reported to be 5.4(5). Log Koc values reported in the literature were reported to be 4.79(6), 4.62(7), 4.74(8) and 4.87(9). According to a classification scheme(10), these log Koc values suggest that fluoranthene is expected to be immobile in soil(SRC).

Toxics Screening Level

A chronic initial threshold screening level (ITSL) for fluoranthene is 140 µg/m3 with annual averaging time.

Other adverse effects

no data available

SECTION 13: Disposal considerations

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

UN Number

ADR/RID: UN2811 (For reference only, please check.)

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

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

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.)

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.)

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.)

Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

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.

PICCS

Not Listed.

Vietnam National Chemical Inventory

Listed.

IECSC

Listed.

Korea Existing Chemicals List (KECL)

Not Listed.

SECTION 16: Other information

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/

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