

Chemical Safety Data Sheet MSDS / SDS

Pyrene SDS

Revision Date:2024-04-25 Revision Number:1

Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8
Section 9	Section 10	Section 11	Section 12	Section 13	Section 14	Section 15	Section 16

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

Product name: Pyrene
CAS: 129-00-0

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.in
Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090
Telephone: +91 9550333722

SECTION 2: Hazards identification**Classification of the substance or mixture**

Not classified.

GHS label elements, including precautionary statements

Signal word No signal word

Hazard statement(s)

none

Precautionary statement(s)**Prevention**

none

Response

none

Storage

none

Disposal

none

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients**Substance**

Chemical name: Pyrene

Common names and
synonyms: Pyrene

CAS number: 129-00-0

EC number: 204-927-3

Concentration: 100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest.

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

Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Pyrene is a carcinogenic agent and is absorbed by the skin. It is a skin irritant, a suspected mutagen, and an equivocal tumor-causing agent. Workers exposed to 3 to 5 mg/m³ of pyrene exhibited some teratogenic effects. Pyrene is a polycyclic aromatic hydrocarbon (PAH). The acute toxicity of pure PAHs appears low when administered orally or dermally to rats or mice. Human exposure to PAHs is almost exclusively via the gastrointestinal and respiratory tracts, and approximately 99 percent is ingested in the diet. Despite the high concentrations of pyrene to which humans may be exposed through food, there is currently little information available to implicate diet-derived PAHs as the cause of serious health effects. (EPA, 1998)

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: Firefighting measures

Suitable extinguishing media

This chemical is a combustible solid. Use dry chemical, carbon dioxide, water spray, or alcohol foam extinguishers. Poisonous gases

are produced in fire. If material or contaminated runoff enters waterways, notify downstream users of potentially contaminated waters. Notify local health and fire officials and pollution control agencies. From a secure, explosion-proof location, use water spray to cool exposed containers. If cooling streams are ineffective (venting sound increases in volume and pitch, tank discolors, or shows any signs of deforming), withdraw immediately to a secure position.

Specific hazards arising from the chemical

When heated to decomposition, it emits acrid smoke and fumes. (EPA, 1998)

Special protective actions for fire-fighters

Use water spray, carbon dioxide, dry powder, alcohol-resistant foam, polymer foam.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder.

Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder.

Methods and materials for containment and cleaning up

SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations will not occur. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it must be evaluated in accordance with EPA 40 CFR Part 261, specifically Subpart B, in order to determine the appropriate local, state and federal requirements for disposal.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. 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

Separated from strong oxidants. Keep in a well-ventilated room. Store in a cool, dry place.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

MAK skin absorption (H)

Biological limit values

no data available

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.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety spectacles.

Skin protection

Protective gloves.

Respiratory protection

Avoid inhalation of dust.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Pyrene is a colorless solid, solid and solutions have a slight blue fluorescence. Used in biochemical research. (EPA, 1998)
Colour:	Monoclinic prismatic tablets from alcohol or by sublimation; pure pyrene is colorless
Odour:	no data available
Melting point/freezing point:	250°C(dec.)(lit.)
Boiling point or initial boiling point and boiling range:	404°C(lit.)
Flammability:	Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	0°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 72° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Kow = 4.88

Vapour pressure:	2.28E-06mmHg at 25°C
Density and/or relative density:	1.271
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

80 mg/cu m; NIOSH considers coal tar pitch volatiles to be potential occupational carcinogens. Coal tar pitch volatiles Decomposes on heating. This produces irritating fumes.

Chemical stability

no data available

Possibility of hazardous reactions

PYRENE reacts with nitrogen oxides to form nitro derivatives. It also reacts with 70% nitric acid. (NTP, 1992)

Conditions to avoid

no data available

Incompatible materials

Strong oxidizers. Coal tar pitch volatiles

Hazardous decomposition products

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

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 2700 mg/kg

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. Based on former classification system

Reproductive toxicity

no data available

STOT-single exposure

Exposure to sun may enhance the irritating effect of this substance. This may result in chronic skin discoloration.

STOT-repeated exposure

no data available

Aspiration hazard

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

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50; Species: *Oncorhynchus mykiss* (Rainbow trout, weight 3.17 g, length 6.2 cm); Conditions: freshwater, static, 11.0 deg C, pH 6.19; Concentration: >2000 ug/L for 24 hr /formulation

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: *Daphnia magna* (Water flea); Conditions: freshwater, renewal; Concentration: 72.7 ug/L for 7 days; Effect: growth rate />99% purity

Toxicity to algae: EC50; Species: *Pseudokirchneriella subcapitata* (Green algae, age <24 hr); Conditions: freshwater, static; Concentration: 894000 ug/L for 72 hr; Effect: increased intoxication, immobilization /98% purity

Toxicity to microorganisms: no data available

Persistence and degradability

Polycyclic aromatic hydrocarbons with 4 or less aromatic rings are degraded by microbes and are readily metabolized by multicellular organisms; biodegradation may be the ultimate fate process. Polycyclic aromatic hydrocarbons

Bioaccumulative potential

Experimental BCF values of 72(1), 457(2), and 600-970(3) have been reported in rainbow trout, goldfish and fathead minnow respectively. According to a classification scheme(4), these BCF values suggest that bioconcentration in aquatic organisms is moderate to high(SRC). Pyrene was shown to bioaccumulate in worms exposed to contaminated sediment over a 4 week incubation period, reaching a maximum concn of 60.9 ng/g and an uptake rate constant of 0.0256 hr-L(5). Pyrene had biota-sediment accumulation factors of 0.76 and 0.92 in *Elliptio complanata* and *Mya arenaria*(6). BCFs for pyrene in the amphipod *Diporeia* spp were measured as 36,329, 30,671, 16,810 and 12,316 calculated from the time-weighted avg water concns of 34.0, 51.3, 84.5 and 130.7 ug/L, respectively(7).

Mobility in soil

Experimental Koc values determined with 5 sediment samples obtained from a freshwater lake in Louisiana were 64,954, 63,372, 73,127, 65,380 and 59,675(1). The Koc values of pyrene obtained with soil samples from Flint, MI and Bordone, Canada were 61,936 and 90,000 respectively(2). Measured Koc values of 160,000, 153,000, 98,700 and 169,000 were obtained for pyrene with suspended solids and sediment from the Boston Harbor, MA(3). An experimental Koc value of 76,000 was reported for pyrene with soil obtained from a water treatment facility in Sweden(4). Experimentally determined log Koc values between 4.9 and 5.4 were

reported for pyrene with sediment obtained from Lake Michigan(5) and a log Koc value of 5.5 was reported with sediment obtained from the Boston Harbor, MA(6). Pyrene had a log Koc in sediment from Lake Ketelmeer, The Netherlands of 6.80 (3.75% organic carbon, 0-30 cm depth) and 5.95 (6.48% organic carbon, 40-120 cm depth)(7). Boston Harbor, MA sediment samples taken from South Dorchester Bay, North Quincy, Fort Point Channel and Spectacle Island had log Koc values of 3.54, 3.71, 4.32 and 4.55, respectively, in samples taken Dec 1999(9). According to a classification scheme(10), these Koc values suggest that pyrene is expected to be immobile in soil.

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: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

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

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

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/>

Other Information

Pyrene is one of many polycyclic aromatic hydrocarbons - standards are usually established for them as mixtures, e.g., coal tar pitch volatiles. However, pyrene may be encountered as a laboratory chemical in its pure form. Health effects of exposure to the substance have not been investigated adequately. See ICSC 1415.

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