Safety Data Sheet

According to the UN GHS revision 8

Creation Date: May 20, 2026
Revision Date: May 20, 2026

1. IDENTIFICATION

1.1 GHS Product identifier

Product name: Benzo[a]pyrene

Catalog Number: T6985

CAS Number: 50-32-8

1.2 Other means of identification

Other names: -

1.3 Recommended use of the chemical and restrictions on use

Identified uses:

1.4 Supplier's details

Company: Targetmol Chemicals Inc.

Address: 34 Washington Street, Wellesley Hills, Massachusetts 02481 USA

Tel/Fax: (781) 999-4286

1.5 Emergency phone number

Emergency phone number: 781-999-4286

Service hours: Monday to Friday, 9am-5pm (Standard timezone: UTC/GMT -5 hours).

2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Skin sensitization, Category 1
Germ cell mutagenicity, Category 1B
Carcinogenicity, Category 1B
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1
Reproductive toxicity, Category 1B

2.2 GHS label elements, including precautionary statements

Pictogram(s):

Signal word: Danger

Hazard statement(s):
H317 May cause an allergic skin reaction
H340 May cause genetic defects
H350 May cause cancer
H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s):

Prevention:
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P203 Obtain, read and follow all safety instructions before use.
P273 Avoid release to the environment.

Response:	P302+P352 IF ON SKIN: Wash with plenty of water/... P333+P317 If skin irritation or rash occurs: Get medical help. P321 Specific treatment (see ... on this label). P362+P364 Take off contaminated clothing and wash it before reuse. P318 IF exposed or concerned, get medical advice. P391 Collect spillage.
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

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number
Benzo[a]pyrene	-	50-32-8	200-028-5

4. FIRST-AID MEASURES

4.1 Description of necessary first-aid measures

General advice

no data available

If inhaled

Fresh air, rest.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

Following eye contact

Rinse with plenty of water (remove contact lenses if easily possible).

Following ingestion

Rinse mouth.

4.2 Most important symptoms/effects, acute and delayed

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

4.3 Indication of immediate medical attention and special treatment needed, if necessary

SYMPTOMS: Symptoms of exposure to this compound include mucous membrane irritation, dermatitis, bronchitis, cough, dyspnea, conjunctivitis, photosensitization, pulmonary edema, reproductive effects and leukemia. Contact with the skin may result in erythema, pigmentation, desquamation, formation of verrucae and infiltration. It may also cause keratoses which are relatively small, heaped-up, scaling, brown plaques on the skin, some of which may be fissured and may itch. Exposure to this type of compound may cause reddening and squamous eczema of the lid margins with only small erosion of the corneal epithelium and superficial changes in the stroma which disappear a month following exposure. Repeated exposure may cause sunlight to have a more severe effects on a person's skin and also an allergic skin rash. Aplastic anemia may also occur. Chronic exposure to the fumes and dust of this type of compound can cause discoloration of the cornea and epithelioma of the lid margin. ACUTE/CHRONIC HAZARDS: This compound may be harmful by ingestion or inhalation. It may cause irritation. When heated to decomposition it emits acrid smoke and toxic fumes of carbon monoxide and carbon dioxide. (NTP, 1992)

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Flammable, but generally found in such low quantities it is not considered a fire hazard ... Poisonous gases are produced in fire including carbon monoxide. 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.

5.2 Specific hazards arising from the chemical

Literature sources indicate that this chemical is nonflammable. (NTP, 1992)

5.3 Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media.

6. ACCIDENTAL RELEASE MEASURES

6.1 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. Do NOT wash away into sewer. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Do NOT wash away into sewer. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

6.3 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.

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

Provision to contain effluent from fire extinguishing. Separated from strong oxidants. Store in an area without drain or sewer access. Cool. Dry.Store in tightly closed containers in a cool, well-ventilated area away from oxidizing chemicals (such as chlorates, perchlorates, permanganates, and nitrates). A regulated, marked area should be established where this chemical is handled, used, or stored in compliance with OSHA standard 1910.1045.

Powder: -20°C for 3 years | In solvent: -80°C for 1 year

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limit values

TLV: A2 (suspected human carcinogen); BEI issued.MAK: skin absorption (H); carcinogen category: 2; germ cell mutagen group: 2

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 or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use closed system and ventilation.

Thermal hazards

no data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Color	no data available
Odour	Faint aromatic odor
Melting point/freezing point	207°C(lit.)
Boiling point or initial boiling point and boiling range	496°C(lit.)
Flammability	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	73°C(lit.)
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	DMSO: 9.09 mg/mL (36.03 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
N-octanol-water partition coefficient	log Kow = 6.13
Vapour pressure	5.49e-09 mm Hg at 77° F (NTP, 1992)
Density and/or relative density	1.1549 g/cm3 (Estimated)
Relative vapour density	8.7 (NTP, 1992) (Relative to Air)
Particle characteristics	no data available

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 Reacts with strong oxidants. Decomposes on heating. This produces toxic fumes.

10.2 Chemical stability

Undergoes photo-oxidation after irradiation in indoor sunlight or by fluorescent light in organic solvents.

10.3 Possibility of hazardous reactions

Combustible.BENZO[A]PYRENE undergoes photo-oxidation after irradiation in indoor sunlight or by fluorescent light in organic solvents. Incompatible with strong oxidizing agents including various electrophiles, peroxides, nitrogen oxides and sulfur oxides. Oxidized by ozone, chromic acid and chlorinating agents. Readily undergoes nitration and halogenation. Hydrogenation occurs with platinum oxide (NTP, 1992).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Incompatibilities: strong oxidizers, nitrogen dioxide, and ozone.

10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and fumes.

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

CLASSIFICATION: B2; probable human carcinogen. BASIS FOR CLASSIFICATION: Human data specifically linking benzo(a)pyrene (BAP) to a carcinogenic effect are lacking. There are, however, multiple animal studies in many species demonstrating BAP to be carcinogenic following administration by numerous routes. BAP has produced positive results in numerous genotoxicity assays. NOTE: At the June, 1992 CRAVE Work Group meeting, a revised risk estimate for benzo(a)pyrene was verified. ... The Carcinogenicity Background Document provides details on the rationale and methods used to derive the carcinogenicity values found in IRIS. ... HUMAN CARCINOGENICITY DATA: Inadequate. ANIMAL CARCINOGENICITY DATA: Sufficient. Based on former classification system

Reproductive toxicity

no data available

STOT-single exposure

See Notes.

STOT-repeated exposure

Repeated or prolonged contact may cause skin sensitization. This substance is carcinogenic to humans. May cause heritable genetic damage to human germ cells. May cause toxicity to human reproduction or development.

Aspiration hazard

A harmful concentration of airborne particles can be reached quickly when dispersed.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish: LT50 (time to 50% mortality); Species: Pimephales promelas (Fathead minnow, larvae 7 days posthatch); Conditions: freshwater, renewal; Concentration: 5.6 ug/L for 40.05 hr
Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water flea, about 4 days old juvenile); Conditions: freshwater, static, 20 deg C, pH 8.0, alkalinity 250 mg/L CaCO3; Concentration: 40 ug/L for 24 hr (95% confidence interval: 32-49 ug/L); Effect: intoxication, immobilization
Toxicity to algae: EC50; Species: Pseudokirchneriella subcapitata (Green algae, 500000 cells/mL); Conditions: freshwater, static, 23 deg C; Concentration: 15 ug/L for 72 hr; Effect: growth, general /97% purity
Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: (14)C-benzo(a)pyrene was not significantly mineralized in sludge treated Caledon soil; half-lives ranged from 23 to 266 weeks (1). The persistence of benzo(a)pyrene in soil is expected to vary depending upon the nature of compounds accompanying it and the nature and previous history of the soil(1). After 5 days incubation in activated sludge, <0.1% of the applied (14)C-benzo(a)pyrene concn was degraded to (14)-CO2(2). Incubation of (14)C-benzo(a)pyrene in creosote-pentachlorophenol contaminated soil over 285 days led to a small, <1%, mineralization of benzo(a)pyrene(3). Calculated half-lives for the mineralization of (14)C-benzo(a)pyrene in sediment/water microcosms ranged from >200 weeks in Redfish Bay, TX to >300 weeks in Lake Chicot, AR; no mineralization was detected in microcosms containing sediment and water from DeGray Reservoir, AR(4). The extent of mineralization of (14)C-benzo(a)pyrene, at a concentration of 105 ng/g, in soils collected from an abandoned coal tar refinery was very low, <8%, after 160 days(5). The level of indigenous mineralization of (14)C-benzo(a)pyrene in soils obtained from three abandoned coal gasification plants as measured by serum bottle respirometry ranged from not detectable to 25% following incubations >180 days; (14)C-benzo(a)pyrene mineralization occurred after a 28-day lag period(6). In soils from Alert (contaminated with Arctic diesel fuel), Saglek (from a radar installation), Varta (from a former gasworks site), and Westbrook (not known to be polluted), the percent removal of benzo(a)pyrene (10 ug/mL concn) from enrichment cultures after 90 days incubation under aerobic conditions were, respectively: at 20 deg C, 68, 76, 60, and 27; at 7 deg C, 33, 31, 34 and 37(7).

12.3 Bioaccumulative potential

Gillichthys mirabilis (mudsucker) exposed to benzo(a)pyrene /concn not specified/ for 96 hr exhibited a bioconcentration factor of 0.048; Oligocottus maculosus (tidepool sculpin) exposed to benzo(a)pyrene /concn not specified/ for 1 hr exhibited a bioconcentration factor of 0.13; Citharichthys stigmacus (sand dab) exposed to benzo(a)pyrene /concn not specified/ for 1 hr exhibited a bioconcentration factor of 0.02. Edible tissue

12.4 Mobility in soil

Sorption coefficients for benzo(a)pyrene obtained during 48 hour batch experiments using two lake sediments with organic carbon content of 1.87 and 2.07%, and a high chemical concentration were 7,000 and 22,000, respectively(1). Sorption coefficients obtained from 48 hour batch experiments using a low benzo(a)pyrene concentration were 8,700 and 35,000 using lake sediments with 1.87% and 2.07% organic carbon, respectively(1). These values correspond to estimated Koc values of 2.7X10+5, 1.1X10+6, 4.7X10+5, and 1.7X10+6(SRC) using a regression-derived equation(2).. Sorption removal accounted for >3.0% and >3.2% of the benzo(a)pyrene present in the influent of a high-loaded laboratory scale activated sludge reactor and a biological aerated filter reactor, respectively; the calculated adsorption removal may be conservatively low because the sludge samples were dried before analysis(3). Kd, soil/water partition coefficients, of 18.2 and 69.0 were determined in Kidman sandy loam, 0.51% organic carbon, and Nunn clay loam, 1.1% organic carbon(4). These values correspond to Koc values of 930 and 6300, respectively(SRC), using a regression-derived equation(2).. Measured log Koc values ranged from 6.00 to 6.28 in sediments and porewater isolated from three cores from Boston Harbor, MA(5). Sorption partition coefficients for benzo(a)pyrene with natural dissolved organic carbon from Lake Ketelmeer ranged from 2.8X10+6 at 45 deg C to 1.6X10+7 at 16 deg C(6). A sorption partition coefficient of 2.5X10+6 was observed for benzo(a)pyrene with particulate organic matter from Lake Ketelmeer at 20 deg C(6). Average partition coefficients for benzo(a)pyrene in natural interstitial waters ranged from 2.2X10+3 and 9.0X10+6 for Government Pond, Grand Haven, MI and Lake Michigan, respectively(7). Sorption of (14)C-benzo(a)pyrene on sediment collected in the harbor of Rotterdam was measured using batch experiments; cosolvent partition coefficients(log) ranged from 5.2 to 6.3(8). Partition coefficients (log) for (14)C-benzo(a)pyrene using fulvic and humic acids derived from salt-marsh estuaries ranged from 3.48 to 3.86 and 4.12 to 4.29, respectively(9). Benzo(a)pyrene log Kp values ranged from 5.18 to 5.79 in porewater and 4.90 to 5.36 in elutriates(10). 22% benzo(a)pyrene removal over 36 days in an activated sludge pilot reactor was attributed to adsorption to sludge(11). According to a recommended classification scheme(12), these Koc values suggest that benzo(a)pyrene is expected to have low to no mobility in soil (SRC).

12.5 Other adverse effects

no data available

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.

14. TRANSPORT INFORMATION

14.1 UN Number

no data available

14.2 UN Proper Shipping Name

no data available

14.3 Transport hazard class(es)

no data available

14.4 Packing group, if applicable

no data available

14.5 Environmental hazards

no data available

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

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.
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.

16. OTHER INFORMATION

Information on revision

Creation Date	May 20, 2026
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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/

Other Information

Do NOT take working clothes home.Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.Benzo(a)pyrene is present as a component of polycyclic aromatic hydrocarbons (PAHs) in the environment, usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.
