Chemical Safety Data Sheet MSDS / SDS

7,12-dimethylbenz[a]anthracene SDS

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

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

Product identifier

Product name: 7,12-dimethylbenz[a]anthracene

CAS: 57-97-6

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

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SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Carcinogenicity, Category 1B

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H302 Harmful if swallowed
H350 May cause cancer

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P203 Obtain, read and follow all safety instructions before use.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P318 IF exposed or concerned, get medical advice.

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.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	7,12-dimethylbenz[a]anthracene
Common names and synonyms:	7,12-dimethylbenz[a]anthracene
CAS number:	57-97-6
EC number:	200-359-5
Concentration:	100%

SECTION 4: First aid measures

Description of necessary 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/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound include irritation of the skin, eyes and gastrointestinal tract. It may also cause acetonemia. ACUTE/CHRONIC HAZARDS: This compound is harmful by ingestion, inhalation or skin absorption. It is an irritant of the skin, eyes and gastrointestinal tract. When heated to decomposition it emits acrid smoke, irritating fumes and toxic fumes of carbon monoxide and carbon dioxide. (NTP, 1992)

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

Absorption, Distribution and Excretion

After iv injection into rats, 7,12-dimethylbenz(a)anthracene was taken up rapidly by the liver, bound to particular fractions, & subsequently transformed into polar metab, which have less affinity for particulate fractions than the parent hydrocarbon, & which were recovered from cellular cytosol. after transfer to cytosol, metabolites were secreted into bile.

SECTION 5: Firefighting measures

Suitable extinguishing media

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. (NTP, 1992)

Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

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

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

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

Substances in this high-chronic-toxicity category incl heavy metal compd & compd ... classified as strong carcinogens. examples of compd ... considered to be strong carcinogens incl ... 7,12-dimethylbenz(a)anthracene ... all containers ... in this category should have labels that identify the contents & incl warning ... storage areas for substances in this category should have limited access, & special signs should be posted if a special toxicity hazard exists. any area used for storage ... maintained under negative pressure with respect to surrounding areas.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

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 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 and safety characteristics

Physical state:	PHYSICAL DESCRIPTION: Yellow to greenish-yellow crystals or a yellow solid. Odorless. Maximum fluorescence at 440 nm. Bluish-violet fluorescence in UV light. (NTP, 1992)
Colour:	PLATES, LEAFLETS FROM ACETONE & ALC, FAINT GREENISH-YELLOW TINGE
Odour:	no data available
Melting point/freezing point:	217°C(lit.)
Boiling point or initial boiling point and boiling range:	191°C(lit.)
Flammability:	no data available
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	58°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 = 5.80
Vapour pressure:	no data available
Density and/or relative density:	0.9 g/mL at 25°C(lit.)
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

no data available

Chemical stability

no data available

Possibility of hazardous reactions

7,12-DIMETHYLBENZ[A]ANTHRACENE is incompatible with strong oxidizing agents (NTP, 1992).

Conditions to avoid

no data available

Incompatible materials

no data available

Hazardous decomposition products

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

SECTION 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

no data available

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: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

Carbon-14 labeled 7,12-dimethylbenz(a)anthracene was introduced into a large marine microcosm typical of shallow marine waters. Within 12 hours after the addition, 20 percent of the degradation products was transferred to the sediments. The rate of Carbon-14 labeled carbon dioxide production resulting from the metabolism of degradation products was initially 0.63 percent per day, then dropped to 0.13 percent per day after 40 days. After 62 days in an enclosed marine ecosystem, 12 percent of the 7,12-dimethylbenz(a)anthracene had been respired to carbon dioxide, and about 18 percent could be extracted from sediments(1). In another study, 7,12-dimethylbenz(a)anthracene was not degraded in 6 days in a standard BOD test using an activated sludge inoculum(2).

Bioaccumulative potential

An estimated BCF of 7,100 was calculated for 7,12-dimethylbenz(a)anthracene(SRC), using an experimental log Kow of 5.80(1,SRC) and a recommended regression-derived equation(2). According to a classification scheme(3), this BCF suggests that bioconcentration in aquatic organisms would be very high(SRC). Dimethylbenz(a)anthracene, having a maximum exposure concentration of 0.0006 ppm, was determined to bioconcentrate in the marine species Macoma inquinata at a level of 0.86 ppm after 7 days. This yielded a bioconcentration factor of 1,349(4). Dimethylbenzanthracene bioaccumulation in the presence of 0.2 mg/l humic acid was determined to be 64.2 nmol/g dry wt Daphnia after 6 hours, having a BCF of 968. Dimethylbenzanthracene bioaccumulation in the presence of 2.0 mg/l humic acid was determined to be 55.8 nmol/g dry wt Daphnia after 6 hours, having a BCF of 666(5). This demonstrated that the presence of humic acid did not significantly change the bioavailability of 7,12-dimethylbenz(a)anthracene to Daphnia(5). When deposit feeding clams, Macoma inquinata, were exposed to detritus contaminated with Prudoe Bay Crude Oil, to which an unspecified isomer of dimethylbenzanthracene had been added for 7 days, the log bioconcentration factor from seawater was 3.13. The chemical associated with sediment was not available for uptake(6).

Mobility in soil

7,12-Dimethylbenz(a)anthracene adsorbs very strongly to soils and sediment. The mean Koc value for its adsorption to 13 soils and sediments from the central U.S. was 235,700(1). According to a recommended classification scheme(3), this Koc value suggests that 7,12-dimethylbenz(a)anthracene would be immobile in soil(SRC). While adsorption was strongly correlated to organic carbon content, it was independent of other soil or sediment properties such as pH, cation exchange capacity, clay content or mineralogy(1). Another investigator found that 20-40% of 7,12-dimethylbenz(a)anthracene was sorbed in water and wastewater samples(2).

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: UN1993 (For reference only, please check.)
IMDG: UN1993 (For reference only, please check.)
IATA: UN1993 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: FLAMMABLE LIQUID, N.O.S. (For reference only, please check.)

IMDG: FLAMMABLE LIQUID, N.O.S. (For reference only, please check.)
IATA: FLAMMABLE LIQUID, N.O.S. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)
IMDG: 3 (For reference only, please check.)
IATA: 3 (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: 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)

Not Listed.

(PICCS)

Not Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Not 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/