ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

bis(8-methylnonyl) phthalate

Revision Date:2025-02-01 Revision Number:1

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

Product identifier

Product name	: bis(8-methylnonyl) phthalate
CBnumber	: CB2901138
CAS	: 89-16-7
EINECS Number	: 201-884-2
Synonyms	: DI-8-METHYL-1-NONYL PHTHALATE

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

no data available

Label elements

Pictogram(s)

Signal word no data available

Hazard statement(s)

no data available

Precautionary statement(s)

Prevention

no data available

Response

no data available

Storage

no data available

Disposal

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no data available

Other hazards

no data available

SECTION 3: Composition/information on ingredients

Substance

Product name	: bis(8-methylnonyl) phthalate
Synonyms	: DI-8-METHYL-1-NONYL PHTHALATE
CAS	: 89-16-7
EC number	: 201-884-2
MF	: C28H46O4
MW	: 446.66

SECTION 4: First aid measures

Description of first aid measures

If inhaled

Fresh air, rest.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower.

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.

Most important symptoms and effects, both acute and delayed

No symptoms reported for any rate of exposure. (USCG, 1999)

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 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. Esters and related compounds

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SECTION 5: Firefighting measures

Extinguishing media

Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire.

Specific Hazards Arising from the Chemical

This chemical is combustible. (NTP, 1992)

Advice for firefighters

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

Collect leaking and spilled liquid in sealable plastic or metal containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

ACCIDENTAL RELEASE MEASURES Personal precautions, protective equipment and emergency procedures Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. For personal protection see section Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Methods and materials for containment and cleaning up Keep in suitable, closed containers for disposal.

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

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

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	neat
Colour	Clear liquid
Odour	Mild odor
Melting point/freezing point	-50°C
Boiling point or initial boiling point and boiling range	425.8°C at 760 mmHg
Flammability	Combustible.
Lower and upper explosion limit/flammability limit	Lower flammable limit: 0.3% by volume at 508 deg F
Flash point	227.6°C
Auto-ignition temperature	755° F (USCG, 1999)
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	108 cP at 20 deg C
Solubility	Insoluble (NTP, 1992)
Partition coefficient n-octanol/water	log Kow = 10.36 (est)
Vapour pressure	5.28X10-7 mm Hg at 25 deg C
Density and/or relative density	0.964g/cm3
Relative vapour density	15.4 (NTP, 1992) (Relative to Air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

Reactivity

Attacks some forms of plastic.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

CombustibleDIISODECYL PHTHALATE is an ester. Esters react with acids to liberate heat along with alcohols and acids. Strong oxidizing acids may cause a vigorous reaction that is sufficiently exothermic to ignite the reaction products. Heat is also generated by the interaction of esters with caustic solutions. Flammable hydrogen is generated by mixing esters with alkali metals and hydrides. Can generate electrostatic charges. [Handling Chemicals Safely 1980. p. 250].

Conditions to avoid

no data available

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

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

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 64 g/kg /64,000 mg/kg/
- Inhalation: LC50 Rat inhalation >12.54 mg/L/4 hr Vestinol DZ
- 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: LC50; Species: Lepomis macrochirus (Bluegill) juvenile, length 29-40 mm; Conditions: freshwater, static, 22 deg C, pH 7.6-7.9, hardness 25-50 mg/L CaCO3, alkalinity 25-50 mg/L CaCO3; Concentration: 370 ug/L for 96 hr /> or = 95% purity
Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water flea) age < or =24 hr; Conditions: freshwater, static, 20 deg C, pH 7.6-7.9, hardness 25-50 mg/L CaCO3, alkalinity 25-50 mg/L CaCO3; Concentration: 20 ug/L for 48 hr; Effect: intoxication, immobilization /> or = 95% purity
Toxicity to algae: EC50; Species: Pseudokirchneriella subcapitata (Green algae); Conditions: freshwater, static, 22-24 deg C, pH 7.6-7.9, hardness 25-50 mg/L CaCO3, alkalinity 25-50 mg/L CaCO3; Concentration: 800 ug/L for 96 hr; Effect: decreased population abundance /> or = 95% purity
Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: In a semi-continuous activated sludge test (Soap and Detergent Association biodegradation test method), the mean degradation for diisodecyl phthalate was 68% in 24 hr(1). In a die-away phase of the testing, it took 9 days to achieve 90% degradation(1). Diisodecyl phthalate is confirmed to be degradable in the screening procedure of the Japanese Ministry of Trade and Industry (MITI) which uses a mixed inoculum derived from soil, fresh water and sewage(2). In an acclimated shake flask CO2 evolution test, loss of parent compound (primary degradation) as well as CO2 evolution (ultimate degradation) was measured using an inoculum prepared from soil and sewage, >99% of diisodecyl phthalate was lost and 56% of theoretical CO2 was evolved after 28 days(3). The biodegradation half-life was 9.6 days with a 4.9 day lag(3). Diisodecyl phthalate, present at 100 mg/L, reached 2% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(4). Diisodecyl phthalate, present at a concentration of 100 ppm, was degraded 14 and 30% after three days cultivation in water from the Mino River and Akashi Beach, Japan, respectively(5). Diisodecyl biodegraded 67% from an initial concentration of 48 ppm and 100 ppm in 28 days in activated sludge at 22 and 25 deg C, respectively(6). Diisodecyl phthalate degraded 42% in 21 days at 25 deg C from a starting concentration of 100 ppm(6). An aerobic aquatic half-life of 23 days was given for diisodecyl phthalate(7).

Bioaccumulative potential

BCFs of <3.6 and <14.4 were measured for diisodecyl phthalate at chemical concentrations of 1 and 0.1 mg/L, respectively, using carp (Cyprinus carpio) which were exposed over an 8-week period(1). According to a classification scheme(2), these BCFs suggest that bioconcentration in aquatic organisms is low(SRC). The mean log BCF of diisodecyl phthalate in Daphnia magna as determined in a 21 day test using ring-labeled chemical was 2.06(3), corresponding to a BCF of 115(SRC). The mean log BCF in mussels (Mytilus edulis) was 3.54 between 14 and 28 days also using ring-labeled ester(4), corresponding to a BCF of 3467(SRC). However depuration was rapid in mussels, the half-life being 3.5 days(4).

Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the log Koc of diisodecyl phthalate can be estimated to be 6.04(SRC). Other estimated log Koc values reported were 5.46 and 5.78(2). According to a classification scheme(3), these estimated log Koc values suggest that diisodecyl phthalate is expected to be immobile in soil. The average Koc of (14)C-diisodecyl phthalate using three standard USEPA sediments (supplied and characterized by the EPA) was measured at 2.86X10+5(4).

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: no data available

IMDG: no data available

IATA: no data available

UN Proper Shipping Name

ADR/RID: no data available

IMDG: no data available

IATA: no data available

Transport hazard class(es)

ADR/RID: no data available

IMDG: no data available

IATA: no data available

Packing group, if applicable

ADR/RID: no data available

IMDG: no data available

IATA: no data available

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

Not Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Not Listed.

PICCS

Not Listed.

Vietnam National Chemical Inventory

Not 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/