

## Chemical Safety Data Sheet MSDS / SDS

**bis(8-methylnonyl) phthalate**Revision Date:2023-10-21 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 : 400-158-6606

---

**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**

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

---

## 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/flammable 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 <sup>-7</sup> mm Hg at 25 deg C
Density and/or relative density	0.964g/cm <sup>3</sup>
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

Combustible DIISODECYL 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 CaCO<sub>3</sub>, alkalinity 25-50 mg/L CaCO<sub>3</sub>; 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 CaCO<sub>3</sub>, alkalinity 25-50 mg/L CaCO<sub>3</sub>; 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 CaCO<sub>3</sub>, alkalinity 25-50 mg/L CaCO<sub>3</sub>; 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 CO<sub>2</sub> evolution test, loss of parent compound (primary degradation) as well as CO<sub>2</sub> evolution (ultimate degradation) was measured using an inoculum prepared from soil and sewage, >99% of diisodecyl phthalate was lost and 56% of theoretical CO<sub>2</sub> 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  $2.86 \times 10^5$ (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?pagelD=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagelD=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/>

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.