

SAFETY DATA SHEETS

According to the UN GHS revision 10

1: Identification

1.1 GHS Product identifier

Product name Dimethyl Phthalate

1.2 Other means of identification

Product number 131-11-3

Other names Dimethyl Phthalate

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.

Uses advised against no data available

1.4 Supplier's details

Company MolBest.com

Address MolBest.com

Telephone MolBest.com

1.5 Emergency phone number

Emergency phone number MolBest.com

Service hours MolBest.com

2: Hazard identification

2.1 Emergency Overview

Low-risk substances usually cause only mild irritation or discomfort. Under normal handling conditions, they are unlikely to pose a significant risk to human health or the environment. However, basic safety precautions must be followed.

2.2 GHS Classification

Hazardous to the aquatic environment, acute hazard : Category 3

2.3 GHS label elements, including precautionary statements

Pictogram(s)

Signal word

Hazard statement(s) H402 Harmful to aquatic life

Precautionary statement(s)

Prevention P273 Avoid release to the environment.

| | |
|-----------------|---|
| Response | no data available |
| Storage | no data available |
| Disposal | P501 Dispose of contents/container to ... |

2.4 Physical and chemical

The physical and chemical hazards are low, and they are non-flammable, non-explosive, and non-corrosive. Some substances may be slightly flammable or irritating, but the risk is low.

2.5 Health hazards

May cause mild skin or eye irritation, such as redness and itching. Inhalation or ingestion of small amounts may cause temporary discomfort, but no serious or long-term health effects. No special medical treatment is generally required.

2.6 Environmental hazards

It has a low impact on the environment and is only slightly toxic to aquatic organisms and terrestrial ecosystems. Under normal disposal conditions, it will not cause significant environmental pollution and is highly biodegradable.

2.7 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 | Concentration |
|--------------------|---------------------------|------------|-----------|---------------|
| Dimethyl Phthalate | Dimethyl Phthalate | 131-11-3 | 205-011-6 | 99% |

4: First-aid measures

4.1 General advice

Stop contact immediately and rinse the contact area with clean water; if symptoms are mild (such as skin redness, eye stinging), rest and observe; if symptoms persist or worsen, seek medical attention and carry the material SDS

4.2 If inhaled

Move to a ventilated place and breathe fresh air deeply; if a mild cough occurs, drink plenty of warm water to relieve it, no special treatment is required

4.3 In case of skin contact

Rinse with running water for 5-10 minutes. If itching occurs, apply anti-allergic ointment; avoid scratching

4.4 In case of eye contact

Rinse with clean water for 5 minutes and apply artificial tears; if discomfort persists, go to an ophthalmologist for treatment.

4.5 If swallowed

If a small amount is accidentally ingested (such as a mild irritant), drink plenty of water to promote excretion; seek medical attention if nausea occurs, and do not induce vomiting on your own.

4.6 Most important symptoms and effects, both acute and delayed

Mild redness and itching of the skin, brief stinging of the eyes, and a mild cough; no long-term health effects.

4.7 Protection of first-aiders

Rescuers need to wear ordinary gloves and goggles; no special heavy equipment is required, and they can just wash their hands after contact.

4.8 Notes to physician

Inform your doctor of the substance type (e.g., mild irritant, aquatic hazard); treat symptomatically (e.g., anti-allergic, anti-inflammatory); no special treatment is required.

5: Fire-fighting measures

5.1 Unsuitable extinguishing media

Mild irritants: No special contraindications, avoid using fire extinguishing agents that are incompatible with the substance (such as using alkali when encountering acid); Aquatic hazardous substances: Avoid using fire extinguishing agents that pollute water bodies (such as phosphorus-containing foam)

5.2 Specific hazards during fire fighting

The risk of combustion is low, mostly small local fires that are not easy to spread; some substances release slightly irritating gases (such as acetic acid) when burned, which have little impact on health; if the wastewater from fire extinguishing of aquatic hazardous substances enters the water body, it may harm aquatic life.

5.3 Hazardous combustion products

Carbon dioxide, water vapor, slightly irritating gases (such as sulfur dioxide, acetic acid vapor).

5.4 Specific extinguishing methods

For small areas: use dry powder/water to extinguish the fire (if compatible), and use wet cleaning for dust (to prevent dust); for large areas: use foam/water to extinguish the fire, and collect the fire extinguishing wastewater at the same time (to prevent water pollution); after extinguishing the fire, ventilate to dilute the residual gas.

5.5 Special protective equipment for fire-fighters

Wear anti-static work clothes, nitrile gloves, and goggles; wear a dust mask when working with dust; no special heavy equipment is required, and maintain good ventilation during operation.

6: Accidental release measures

6.1 Protective measures for workers

Wear chemical protective clothing (resistant to corresponding chemicals), chemical protective gloves, and goggles; wear a gas mask (organic vapor filter cartridge) for volatile substances; avoid skin contact.

6.2 Environmental protection measure

Set up waterproof cofferdams to prevent leaks from entering rivers/farmland; use oil-absorbing cotton/adsorbents to intercept leaks that have already entered the water body; take samples from contaminated water bodies for testing and assess the ecological impact.

6.3 Containment methods for leaked chemicals

Collect liquids in water-resistant containers (to prevent rain); collect solids in chemical-resistant bags (to prevent rain erosion); and store them in rain-proof and seepage-proof areas after collection.

6.4 Cleanup methods for chemical spills

Small leakage: absorb with aquatic protective adsorption materials; large leakage: transfer to storage tank with corrosion-resistant pump; cleaning water is collected and treated, and direct discharge is prohibited.

6.5 Measures to prevent the spread of leaks

Designate a 10-meter isolation zone and monitor the drainage outlet; add a rain shelter on rainy days; and set up monitoring points in downstream water bodies.

6.6 Container leakage treatment

Minor leaks: seal with waterproof sealant; serious leaks: move to a rainproof area, have professionals handle it, and reuse the container after passing inspection.

6.7 Special considerations

Do not discharge leaked materials/cleaning water directly into water bodies; use phosphorus-free detergents; report the leak to the environmental protection department after treatment.

7: Handling and storage

7.1 Safe storage conditions

Store in a normally ventilated warehouse (natural ventilation or mechanical ventilation, air changes ? 2 times/hour); the container should be ordinary plastic or glass (such as polyethylene bottles, glass bottles) with a sealed lid; the warehouse floor should be ordinary cement with no special anti-corrosion requirements; equipped with basic fire-fighting equipment (such as fire extinguishers, fire sand).

7.2 Storage precautions

Store materials by category (e.g. liquids and solids separated) to avoid confusion; clearly mark the substance name and H code on container labels; check containers for damage monthly and clean up minor leaks immediately; eating and drinking are prohibited in the warehouse, and hands must be washed after

work.

7.3 VCI Storage Grade

Level 4 (lowest): Metal containers do not require additional VCI protection and can be stored normally. The humidity in the warehouse is 70%, which prevents slight rust on ordinary metals without affecting their use. For long-term storage (over 6 months), the dust on the surface of the container needs to be wiped off.

7.4 Recommended storage temperature

10-35°, store at room temperature; avoid extreme temperatures (below -5° or above 40°); deliquescent substances (such as certain salts) should be stored in a dry place with a desiccant (such as silica gel) and replaced regularly (if the label has a recommended storage temperature, follow the label).

7.5 Handling

For precautions see Safety Data Sheet section 2

Advice on safe handling : Work under hood. Do not inhale substance/mixture.

8: Exposure controls/personal protection

8.1 Respiratory protection

When exposed to slightly irritating dust (such as talcum powder) or vapor (such as acetic acid), wear an ordinary dust mask; a respirator is not necessary when ventilation is good.

8.2 Recommended Filter type

For dust, choose Type P1 filter cotton; for slight organic vapor, choose Type A1 filter cartridge; no composite filtration is required, basic protection is sufficient.

8.3 Eye/face protection

Wear ordinary impact-resistant goggles with resin lenses. Wear protective glasses when handling liquids to avoid splashing.

8.4 Skin and body protection

Wear ordinary work clothes (cotton or chemical fiber) and wear a waterproof apron when handling liquids to prevent clothes from getting wet.

8.5 Hand protection

Wear nitrile or latex gloves with a thickness of 0.2mm and replace them promptly after use to avoid damage.

8.6 Hygiene measures

Wash your hands with soap and running water after work. If your skin becomes red or itchy, apply moisturizer. Do not rub your eyes with your hands. Wash your clothes normally; no special disinfection requirements are required.

9: Physical and chemical properties and safety characteristics

| | |
|---|--|
| Physical state | clear oily liquid |
| Colour | Pale yellow |
| Odour | Slight aromatic odor |
| Melting point/freezing point | 283°C(dec.)(lit.) |
| Boiling point or initial boiling point and boiling range | 284°C(lit.) |
| Flammability | Class IIIB Combustible Liquid: Fl.P. at or above 93.33°C.; however, ignition is difficult.Combustible. |
| Lower and upper explosion limit/flammability limit | Lower flammable limit: 0.9% by volume at 358 deg F (180°C) |
| Flash point | 156°C(lit.) |
| Auto-ignition temperature | 490.56°C (USCG, 1999) |
| Decomposition temperature | When heated to decomp it emits acrid smoke and irritating fumes. |
| pH | 7 (H2O, 20?) |
| Kinematic viscosity | 17.2 cP at 25°C |
| Solubility | less than 1 mg/mL at 20°C |
| Partition coefficient n-octanol/water | log Kow = 1.60 |
| Vapour pressure | 1 mm Hg at 100.28°C ; 5 mm Hg at 131.78°C; 10 mm Hg at 147.61°C |
| Density and/or relative density | 1.192 |
| Relative vapour density | 6.69 (Relative to Air) |
| Particle characteristics | no data available |

10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Combustible. DIMETHYL PHTHALATE reacts 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 with caustic solutions. Flammable hydrogen is generated by mixing with alkali metals and hydrides. Can generate electrostatic charges by swirling or pouring [Handling Chemicals Safely, 1980. p. 250].

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Incompatible materials: Oxidizing agents, acids

10.6 Hazardous decomposition products

Hazardous decomposition products: toxic gases and vapors (such as carbon monoxide) may be released in a fire involving dimethylphthalate.

11: Toxicological information

11.1 Acute toxicity

Oral: LD50 Rat oral 6800 mg/kg

Inhalation: no data available

Dermal: no data available

11.2 Skin corrosion/irritation

no data available

11.3 Serious eye damage/irritation

no data available

11.4 Respiratory or skin sensitization

no data available

11.5 Germ cell mutagenicity

no data available

11.6 Carcinogenicity

CLASSIFICATION: D; not classifiable as to human carcinogenicity. BASIS FOR CLASSIFICATION: Pertinent data regarding carcinogenicity data was not located in the available literature. HUMAN CARCINOGENICITY DATA: None. ANIMAL CARCINOGENICITY DATA: Inadequate. /Classification based on former EPA guidelines/

11.7 Reproductive toxicity

No information is available on the reproductive or developmental effects of dimethyl phthalate in humans. In one animal study, exposure to dimethyl phthalate via gavage had no effects on reproduction.

11.8 STOT-single exposure

no data available

11.9 STOT-repeated exposure

no data available

11.10 Aspiration hazard

no data available

12: Ecological information

12.1 Toxicity

Toxicity to fish: LC50; Species: *Lepomis macrochirus* (bluegill); Conditions: static, hardness 28 to 44 mg/L at CaCO₃, Alkalinity 20 to 30 mg/L CaCO₃, pH 6.7 to 7.4, Dissolved oxygen concn 5.3 to 7.0 mg/L, 20 to 24°C; Concentration: 350 mg/L for 24 hr /> or = 80% purity

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: *Daphnia magna* (water flea) <24 hours old; Conditions: static, 22.5 + or - 0.5°C, pH 7.9 to 8.5, dissolved oxygen 6.0 to 8.6 mg/L, hardness 150 to 170 mg/L; Concentration: 45.9 mg/L for 48 hr; Effects: immobility

Toxicity to algae: EC50; Species: *Pseudokirchneriella subcapitata* (Green algae); Conditions: freshwater, static, 22-24°C, pH 7.6-7.9, hardness 25-50 mg/L CaCO₃, alkalinity 25-50 mg/L CaCO₃; Concentration: 142000 ug/L for 96 hr; Effect: decreased population abundance /> or = 95% purity

Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: After a 2.7 day lag, dimethyl phthalate was degraded in a shake-flask biodegradation test utilizing a soil/sewage inoculum with a half-life of 1.9 days(1). After 28 days, >99% of the dimethyl phthalate had disappeared and 86% mineralization had occurred(1). Dimethyl phthalate was completely degraded within 7 days in a static flask screening test with a wastewater inoculum(2). In two operating plants, 88 and 58% of the dimethyl phthalate was mineralized by the digested municipal sludge(3). In waste water treatment plants, essentially 100% removal resulting from biodegradation was reported(4-6). In a survey of publicly owned treatment works, an average removal of 97% was attributed to biodegradation(7). Dimethyl phthalate, present at 100 mg/L, reached 93% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(8). In activated sludge die-away tests and in a semi-continuous activated sludge test >90% and >81.0% degradation, respectively, was achieved in 1 day(9). Dimethyl phthalate removal of >96 to >99% was observed at the Cedar Creek Wastewater Reclamation - Recharge Facilities, Nassau County, NY(10). Dimethyl phthalate, at a starting concentration of 10-100 mg/L, was biodegraded 90% in 3 days and 100% in 5 days, and had a half-life of 21 hours in acclimated activated sludge from a coke plant waste water treatment system(11). Aerobic degradation studies indicated primary degradation for the lower molecular weight phthalate esters (including dimethyl phthalate) occurred rapidly, typically exceeding 90% degradation within a week, even if unacclimated inocula were used(12).

12.3 Bioaccumulative potential

The mean BCF of dimethyl phthalate in sheepshead minnows was 5.4, after 24 hr(1). Bluegill sunfish showed a bioconcentration factor of 57(2) which may be elevated because only carbon-14 was measured in the experiment and metabolites may be included in the measurement of the parent compound(SRC). The depuration half-life was between 1 and 2 days(2). According to a classification scheme(3), these measured BCFs suggest that bioconcentration in aquatic organisms is low to moderate(SRC). The mean BCF of dimethyl phthalate in brown shrimp was 4.7, after 24 hr(1). Bioaccumulation factors of 3.1 and 6.3 were measured in shrimp (*Peneaus aztecus*) following 1 day of exposure(4). BCFs of 0.14-0.57 were reported for dimethyl phthalate in water spinach (*Ipomoea aquatica*) grown under different conditions on sludge from waste water treatment plants in China(5).

12.4 Mobility in soil

Dimethyl phthalate had a Koc of 55 in soil (89% sand, 11% silt/clay, 20% organic carbon) taken from Calumet, MI(1). Koc values ranging from 80 to 360 were calculated for dimethyl phthalate from its low carbon subsurface core sorption isotherms at different depths(2). Dimethyl phthalate had measured log Koc values of 1.88 to 1.89 in Typic Haplaquept type loamy, sandy soil(3). Dimethyl phthalate also had a reported Koc of 200(4) and log Koc value of 2.3(5). According to a classification scheme(6), these Koc values suggest that dimethyl phthalate is expected to have moderate to high mobility in soil(SRC). An average dimethyl phthalate removal of 79% was observed on a 14 m experimental overland flow slope(7). Relative to the average linear groundwater velocity, 18% retardation was calculated for dimethyl phthalate in a natural gradient tracer test using an unconfined sandy aquifer, assuming an organic carbon content of 0.05%(8). A mean sediment log Koc value of >5.2 was calculated from the mean dimethyl phthalate concentration in water and suspended particulate matter from Lake Yssel, The Netherlands(9). Adsorption of dimethyl phthalate is enhanced in the presence of salt: at a dimethyl phthalate concentration of 700 ug/L, 0.9 ug/g was adsorbed on suspended particulates in seawater, 0.6 ug/g was adsorbed on suspended particulates in 50% sea water, and <0.2 ug/g was adsorbed on suspended particulates in distilled water(10).

12.5 Other adverse effects

no data available

13: Disposal considerations

13.1 Disposal methods for waste chemicals

It can be disposed of as ordinary industrial waste or recycled by a qualified unit. Liquid substances can be neutralized to a neutral pH before discharge (subject to compliance with local environmental protection standards). Solid substances can be safely landfilled or incinerated. After cleaning, the container can be recycled as ordinary waste.

13.2 Precautions

Before disposal, the characteristics of the substance must be confirmed to avoid misjudging the risk level. Mildly irritating substances must be strictly separated from food-grade waste. The disposal process must comply with local environmental regulations. Small amounts of residue can be rinsed with water, and the rinse water must be treated. Records of the amount and destination of disposal must be kept for at least three years.

14: Transport information

14.1 UN Number

ADR/RID: UN2920

IMDG: UN2920

IATA: UN2920

14.2 UN Proper Shipping Name

ADR/RID: CORROSIVE

LIQUID, FLAMMABLE, N.O.S.

IMDG: CORROSIVE LIQUID,

FLAMMABLE, N.O.S.

IATA: CORROSIVE LIQUID,

FLAMMABLE, N.O.S.

14.3 Transport hazard class(es)

ADR/RID: 8

IMDG: 8

IATA: 8

14.4 Packing group, if applicable

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID: no

IMDG: no

IATA: no

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

| Chemical name | Common names and synonyms | CAS number | EC number |
|--|---------------------------|------------|-------------|
| Dimethyl Phthalate | Dimethyl Phthalate | 131-11-3 | 205-011-6 |
| New Zealand Inventory of Chemicals (NZIoC) | | | Listed. |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS) | | | Listed. |
| Vietnam National Chemical Inventory | | | Listed. |
| Australian Inventory of Industrial Chemicals (AIIC) | | | Not Listed. |
| Catalogue of Strictly Restricted Toxic Chemicals in China | | | Not Listed. |
| China Catalog of Hazardous chemicals 2015 | | | Not Listed. |
| European INventory of Existing Commercial chemical Substances | | | Not Listed. |
| IARC Monographs on the Evaluation of Carcinogenic Risks to Humans | | | Not Listed. |
| TSCA Inventory of Chemical Substances | | | Listed. |

16: Other information

Information on revision

SDS Creation Date July 1, 2025

SDS Revision Date July 1, 2025

Abbreviations and acronyms in SDS

- 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%

SDS 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/>

Any questions regarding this Safety Data Sheet, Please send your inquiry to info@MolBest.com

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