

## Chemical Safety Data Sheet MSDS / SDS

## Dinonyl phthalate

Revision Date:2024-12-21 Revision Number:1

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

## Product identifier

Product name : Dinonyl phthalate  
CBnumber : CB4481858  
CAS : 84-76-4  
EINECS Number : 201-560-0  
Synonyms : dinonyl phthalate,di-n-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

Not classified.

## Label elements

## Pictogram(s)

Signal word No signal word

## Hazard statement(s)

none

## Precautionary statement(s)

## Prevention

none

## Response

none

## Storage

none

## Disposal

none

#### Other hazards

no data available

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## SECTION 3: Composition/information on ingredients

### Substance

|              |                                                  |
|--------------|--------------------------------------------------|
| Product name | : Dinonyl phthalate                              |
| Synonyms     | : dinonyl phthalate, di-n-nonyl phthalate        |
| CAS          | : 84-76-4                                        |
| EC number    | : 201-560-0                                      |
| MF           | : C <sub>26</sub> H <sub>42</sub> O <sub>4</sub> |
| MW           | : 418.61                                         |

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## SECTION 4: First aid measures

### Description of 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 and effects, both acute and delayed

Moderately toxic by ingestion. (USCG, 1999)

### Indication of any immediate medical attention and special treatment needed

no data available

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## SECTION 5: Firefighting measures

### Extinguishing media

Fire Extinguishing Agents Not to Be Used: Water may be ineffective. Fire Extinguishing Agents: Alcohol foam, dry chemical, carbon dioxide. (USCG, 1999)

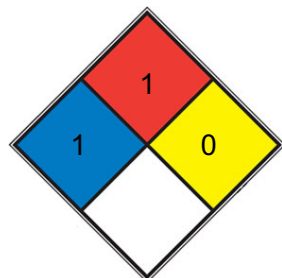
## Specific Hazards Arising from the Chemical

no data available

## Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

## NFPA 704



**HEALTH 1** Exposure would cause irritation with only minor residual injury (e.g. [acetone](#), sodium bromate, potassium chloride)

Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion

**FIRE 1** can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. [mineral oil](#), ammonia)

**REACT 0** Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N2](#))

**SPEC.**

**HAZ.**

## 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

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

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## SECTION 8: Exposure controls/personal protection

### Control parameters

#### Occupational Exposure limit values

|                |                           |                   |                          |                   |
|----------------|---------------------------|-------------------|--------------------------|-------------------|
| Component      | Dinonyl phthalate         |                   |                          |                   |
| CAS No.        | 84-76-4                   |                   |                          |                   |
|                | Limit value - Eight hours |                   | Limit value - Short term |                   |
|                | ppm                       | mg/m <sup>3</sup> | ppm                      | mg/m <sup>3</sup> |
| Austria        | ?                         | 5                 | ?                        | ?                 |
| Ireland        | ?                         | 5                 | ?                        | ?                 |
| Latvia         | ?                         | 1                 | ?                        | ?                 |
| New Zealand    | ?                         | 5                 | ?                        | ?                 |
| United Kingdom | ?                         | 5                 | ?                        | ?                 |
|                | Remarks                   |                   |                          |                   |

#### 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

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

|                |                    |
|----------------|--------------------|
| Physical state | Oily Liquid        |
| Colour         | Clear yellow-brown |

|                                                          |                                            |
|----------------------------------------------------------|--------------------------------------------|
| Odour                                                    | no data available                          |
| Melting point/freezing point                             | -106°C(lit.)                               |
| Boiling point or initial boiling point and boiling range | 245°C/5mmHg(lit.)                          |
| Flammability                                             | no data available                          |
| Lower and upper explosion limit/flammability limit       | no data available                          |
| Flash point                                              | 220°C(lit.)                                |
| Auto-ignition temperature                                | no data available                          |
| Decomposition temperature                                | no data available                          |
| pH                                                       | no data available                          |
| Kinematic viscosity                                      | 112 cP at 20 deg C                         |
| Solubility                                               | In water, 1.73X10-5 mg/L at 25 deg C (est) |
| Partition coefficient n-octanol/water                    | log Kow = 9.52 (est)                       |
| Vapour pressure                                          | 5.14X10-7 mm Hg at 25 deg C (est)          |
| Density and/or relative density                          | 0.97                                       |
| Relative vapour density                                  | no data available                          |
| Particle characteristics                                 | no data available                          |

## SECTION 10: Stability and reactivity

### Reactivity

Flammable. Hydrolyzed by strong mineral acids and strong alkalis.

### Chemical stability

no data available

### Possibility of hazardous reactions

CombustibleDINONYL 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

no data available

### Hazardous decomposition products

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

## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 Rat oral 2.00 g/kg From table
- 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

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## 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

AEROBIC: Dinonyl phthalate, added to a semi-continuous activated sludge apparatus at 5, 10, and 20 mg added per 24 hr, underwent 52%,

48%, and 54% degradation, respectively, under aerobic conditions(1,2). When dinonyl phthalate was incubated with pure cultures of *Pseudomonas acidovorans* under aerobic conditions, the initial degradation products were phthalic acid and nonyl alcohol(3). Di(heptyl,nonyl,undecyl) phthalate had a half-life of 6 to 8 days in river die-away tests(4). In active microcosms containing lake water and sediment, 40 to 48% of (14)C-di(heptyl,nonyl,undecyl)phthalate radioactivity was evolved as carbon dioxide over a 41 day period; after six weeks no residual (14)C-di(heptyl,nonyl,undecyl) phthalate was found in the water column and only 2 to 6% was associated with sediments(4). In semi-continuous activated sludge tests, a primary degradation half-life of <1 day at an addition rate of 5 to 200 mg/L per 24-hour cycle was observed for di(heptyl,nonyl,undecyl) phthalate(4). In shake flask studies using an acclimated bacterial inoculum, an ultimate biodegradation half-life of 5 days was observed for di(heptyl,nonyl,undecyl) phthalate at an initial concentration of 20 mg/L(4). 98% Biodegradation of di(heptyl,nonyl,undecyl) phthalate was observed over a period of 28 days in shake flask tests using an acclimated inoculum consisting of soil and sewage microorganisms(5).

### **Bioaccumulative potential**

An estimated BCF of 3 was calculated in fish for dinonyl phthalate(SRC), using an estimated log Kow of 9.52(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

### **Mobility in soil**

Using a structure estimation method based on molecular connectivity indices(1), the Koc of dinonyl phthalate can be estimated to be  $6.6 \times 10^5$ (SRC). According to a classification scheme(2), this estimated Koc value suggests that dinonyl phthalate is expected to be immobile in soil. In sterile microcosms containing lake water and sediment, approximately 80% of di(heptyl,nonyl,undecyl) phthalate partitioned to sediment(3).

### **Other adverse effects**

no data available

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## **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.

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## **SECTION 14: Transport information**

### **UN Number**

ADR/RID: UN3295 (For reference only, please check.)

IMDG: UN3295 (For reference only, please check.)

IATA: UN3295 (For reference only, please check.)

### **UN Proper Shipping Name**

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

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

IATA: HYDROCARBONS, 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

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## **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)**

Listed.

#### **PICCS**

Not Listed.

#### **Vietnam National Chemical Inventory**

Listed.

#### **IECSC**



Listed.

#### **Korea Existing Chemicals List (KECL)**

Listed.

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## 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](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/>

#### **Disclaimer:**

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