

## Chemical Safety Data Sheet MSDS / SDS

## Dicyclopentadiene

Revision Date:2024-03-16 Revision Number:1

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

## Product identifier

Product name : Dicyclopentadiene  
CBnumber : CB3854309  
CAS : 77-73-6  
EINECS Number : 201-052-9  
Synonyms : dcpd,Dicyclopentadiene

## 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

Flammable liquids, Category 2  
Acute toxicity - Category 4, Oral  
Skin irritation, Category 2  
Eye irritation, Category 2  
Acute toxicity - Category 4, Inhalation  
Specific target organ toxicity – single exposure, Category 3  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

## Label elements

## Pictogram(s)

□□□□

Signal word : Danger

## Hazard statement(s)

H225 Highly Flammable liquid and vapour  
H226 Flammable liquid and vapour

H228 Flammable solid  
H302 Harmful if swallowed  
H304 May be fatal if swallowed and enters airways  
H315 Causes skin irritation  
H319 Causes serious eye irritation  
H320 Causes eye irritation  
H330 Fatal if inhaled  
H331 Toxic if inhaled  
H332 Harmful if inhaled  
H335 May cause respiratory irritation  
H336 May cause drowsiness or dizziness  
H370 Causes damage to organs  
H372 Causes damage to organs through prolonged or repeated exposure  
H373 May cause damage to organs through prolonged or repeated exposure  
H411 Toxic to aquatic life with long lasting effects

**Precautionary statement(s)**

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ventilating/lighting/.../equipment.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 Wash hands thoroughly after handling.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P284 Wear respiratory protection.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P391 Collect spillage. Hazardous to the aquatic environment  
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.  
P307+P311 IF exposed: call a POISON CENTER or doctor/physician.  
P405 Store locked up.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P501 Dispose of contents/container to.....

**Prevention**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 Keep container tightly closed.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.  
P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

#### **Response**

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

P370+P378 In case of fire: Use ... to extinguish.

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P321 Specific treatment (see ... on this label).

P332+P317 If skin irritation occurs: Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P317 Get medical help.

P319 Get medical help if you feel unwell.

P391 Collect spillage.

#### **Storage**

P403+P235 Store in a well-ventilated place. Keep cool.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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**

no data available

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## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: Dicyclopentadiene
Synonyms	: dcpd,Dicyclopentadiene
CAS	: 77-73-6
EC number	: 201-052-9
MF	: C10H12
MW	: 132.2

## SECTION 4: First aid measures

### Description of first aid measures

#### If inhaled

Fresh air, rest.

#### Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

#### 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. Refer for medical attention .

### Most important symptoms and effects, both acute and delayed

LIQUID OR SOLID: Irritating to skin and eyes. (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 if 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.

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## SECTION 5: Firefighting measures

### Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

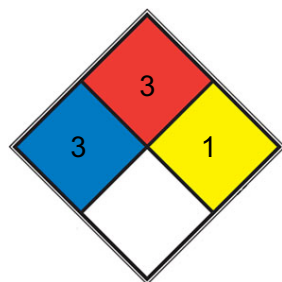
### Specific Hazards Arising from the Chemical

FLAMMABLE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. (USCG, 1999)

### Advice for firefighters

Use water in large amounts, foam, carbon dioxide, powder. In case of fire: keep drums, etc., cool by spraying with water.

### NFPA 704



■ HEALTH 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

- Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions . Liquids having a flash point below 22.8 °C (73 °F) and having a boiling point at or above 37.8 °C (100 °F) or having a flash point between 22.8 and 37.8 °C (73 and 100 °F). (e.g. gasoline, [acetone](#))
- 
- FIRE 3
- REACT 1 Normally stable, but can become unstable at elevated temperatures and pressures (e.g. [propene](#))
- 
- SPEC.
- HAZ.
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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Remove all ignition sources. Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable containers. Then store and dispose of according to local regulations.

### Environmental precautions

Remove all ignition sources. Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable containers. 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: Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas; 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: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

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## SECTION 7: Handling and storage

### Precautions for safe handling

NO open flames, NO sparks and NO smoking. Above 32°C use a closed system, ventilation and explosion-proof electrical equipment. 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 only if stabilized. Store in an area without drain or sewer access. Fireproof. Cool. Keep in the dark. Separated from strong oxidants. 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.

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## SECTION 8: Exposure controls/personal protection

## Control parameters

### Occupational Exposure limit values

TLV: 5 ppm as TWA.MAK: 2.7 mg/m<sup>3</sup>, 0.5 ppm; peak limitation category: I(1); pregnancy risk group: D

### 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 safety goggles.

### Skin protection

Protective gloves.

### Respiratory protection

Use ventilation (not if powder), local exhaust or breathing protection.

### Thermal hazards

no data available

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Physical state	Liquid
Colour	Clear
Odour	Disagreeable camphor-like odor
Melting point/freezing point	32.2 °C. Atm. press.:1 013 hPa. Remarks:Reported as 90 degrees F.
Boiling point or initial boiling point and boiling range	342 °F. Atm. press.:1 atm. Remarks:Converted this equates to 172.2 degrees C at 760 mmHg.
Flammability	Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F.Combustible Solid
Lower and upper explosion limit/flammability limit	0.8-6.3%(V)
Flash point	32.2 °C. Atm. press.:1 013.5 hPa.
Auto-ignition temperature	503 °C. Atm. press.:Ca. 1 013 hPa. Remarks:Standard pressure assumed.
Decomposition temperature	170-172°C
pH	no data available
Kinematic viscosity	cP = 1 - 5. Temperature:20°C. Remarks:Estimated.;dynamic viscosity (in mPa s) = 1 - 5. Temperature:20°C. Remarks:Converted from original units.
Solubility	Insoluble (NTP, 1992)
Partition coefficient n-octanol/water	log Pow = 2.78. Temperature:25 °C.
Vapour pressure	3 hPa (20 °C)
Density and/or relative density	0.968

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Relative vapour density	0.968
Particle characteristics	no data available

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## SECTION 10: Stability and reactivity

### Reactivity

The substance can form explosive peroxides. Decomposes above 170°C . Reacts with oxidants.

### Chemical stability

Stable under recommended storage conditions. Contains the following stabilizer(s): BHT (0.05 %)

### Possibility of hazardous reactions

Flammable; fire hazard DICYCLOPENTADIENE may react vigorously with oxidizing agents. May react exothermically with reducing agents to release hydrogen gas. Can undergo exothermic polymerization reactions in the presence of various catalysts (such as acids) or initiators, if subjected to heat for prolonged periods, or if contaminated. Many undergo autoxidation upon exposure to the air to form explosive peroxides.

### Conditions to avoid

no data available

### Incompatible materials

Incompatible materials: Strong oxidizing agents, Strong acids, Strong bases

### Hazardous decomposition products

Dicyclopentadiene/ decomposes on heating above 170 deg C.

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 - rat (male/female) - 590 mg/kg bw.
- Inhalation: LC50 - rat (male) - 284 ppm.
- Dermal: LD50 - rat (male/female) - > 2 000 mg/kg bw.

### 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

The substance is irritating to the eyes, skin and respiratory tract.

## STOT-repeated exposure

no data available

## Aspiration hazard

A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

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## SECTION 12: Ecological information

### Toxicity

Toxicity to fish: LC50 - *Ictalurus punctatus* - 15.7 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - 0.62 mg/L - 48 h.

Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - 27 mg/L - 72 h.

Toxicity to microorganisms: Minimum inhibitory concentration - *Pseudomonas putida* - 2 ppm expressed as Total Organic Carbon.

### Persistence and degradability

AEROBIC: Dicyclopentadiene, present at 100 mg/L, reached 0% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test (OECD 301C) which classified the compound as not readily biodegradable(1). Using OECD Guideline 301F (Ready Biodegradability: Manometric Respirometry Test) with an activated sludge inoculum, a petroleum-cracked stream containing 29% dicyclopentadiene had 0% biodegradation of the dicyclopentadiene fraction after 28 days(2). Very slow biotransformation of dicyclopentadiene was observed when it was inoculated with soil and water obtained from the Rocky Mountain Arsenal(3). Two field studies in Alberta, Canada found biodegradation rates of 37-57% in 266 days and not appreciable to 60% in 116 days(4).

### Bioaccumulative potential

A BCF range of 58.9-384 was measured in fish for dicyclopentadiene using OECD method 305C and carp (*Cyprinus carpio*) which were exposed over an 8-week period(1). According to a classification scheme(3), this BCF range indicates that bioconcentration in aquatic organisms is moderate to high(SRC). A BCF of 53 was measured in bluegill fish (*Lepomis macrochirus*) using a concentration of 1 mg/L; however, a "disregarded study" flag was applied for environmental fate assessment as the exposure period was only 96 hours(4).

### Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of dicyclopentadiene can be estimated to be 1500(SRC). According to a classification scheme(2), this estimated Koc value suggests that dicyclopentadiene is expected to have low mobility in soil.



## 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: UN2048 (For reference only, please check.)

IMDG: UN2048 (For reference only, please check.)

IATA: UN2048 (For reference only, please check.)

### UN Proper Shipping Name

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

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

IATA: DICYCLOPENTADIENE (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: III (For reference only, please check.)

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

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

### Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

### 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**

Listed.

#### **New Zealand Inventory of Chemicals (NZIoC)**

Listed.

#### **PICCS**

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/>

## Other Information

An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert. Check for peroxides prior to distillation; eliminate if found. Other melting points: 11-13°C for technical product.

### 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.