



SIGMA-ALDRICH

Material Safety Data Sheet

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Version 1.60

Section 1 - Product and Company Information

Product Name: Dicyclopentadiene
Product Number: 454338
Brand: Aldrich Chemical

Company Address: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052

Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
DICYCLOPENTADIENE (STABILIZED WITH BHT)	77-73-6	No	201-052-9	601-044-00-9

Ingredient Name	CAS #	Percent	SARA 313
Stabilized with: BUTYLATED HYDROXYTOLUENE	128-37-0	0.050%	No

Formula: C10H12
Synonyms: Bicyclopentadiene, Biscyclopentadiene, 1,3-Cyclopentadiene, dimer, Dicyclopentadien (Czech), Dicyclopentadiene (ACGIH), Dimer cyklopentadienu (Czech), 3a,4,7,7aTetrahydro-4,7-methanoindene, 3a,4,7,7aTetrahydro-4,7-methanoindene

Section 3 - Hazards Identification

Emergency Overview
Flammable (USA) Highly Flammable (EU), Toxic (USA) Harmful (EU).
Highly flammable. Irritating to eyes, respiratory system and skin.
Target organ(s): Liver, Kidneys, Lungs.

HMS Rating
Health: 2* Flammability: 3 Reactivity: 1

NFPA Rating
Health: 2 Flammability: 3 Reactivity: 1

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Flammable Hazards: Yes

Explosion Hazards
Vapor may travel considerable distance to source of ignition and flash back.
Container explosion can occur under fire conditions. In advanced or massive fires the area should be evacuated and the fire should be fought from a remote explosion-resistant location.

Flash Point: 89.6 °F 32 °C

Autoignition Temp: N/A **Flammability:** Yes

Extinguishing Media Suitable
For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Firefighting Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s)
Flammable liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
Evacuate area. Shut off all sources of ignition.

Procedure(s) of Personal Precaution(s)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
Cover with dry-lime, sand, or soda ash. Place in covered containers using nonsparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling User Exposure
Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage
Suitable

Keep container closed. Keep away from heat, sparks, and open flame. Store under nitrogen.

Special Requirements
Store under inert gas.

Section 8 - Exposure Controls / PPE

Engineering Controls

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

Personal Protective Equipment

Respiratory

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a fullface respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a fullface supplied air respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

General Hygiene Measures

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Exposure Limits, RTECS

<u>Country</u>	<u>Source</u>	<u>Type</u>	<u>Value</u>
USA	ACGIH	TWA	5 PPM
New Zealand	OEL		
Remarks check ACGIH TLV			
USA	NIOSH	TWA	5 PPM

Section 9 - Physical/Chemical Properties

Appearance

Physical State
Liquid

Molecular Weight 132.21 AMU

<u>Property</u>	<u>Value</u>	<u>At Temperature or Pressure</u>
pH	N/A	
BP/BP Range	170 °C	760 mmHg
MP/MP Range	33 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	0.986 g/cm ³	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point °F	89.6 °F	

Method: closed cup

Flash Point °C 32 °C

Method: closed cup

Explosion Limits N/A

Flammability N/A

Autoignition Temp N/A

Solubility N/A

N/A = not available

Section 10 - Stability and Reactivity

Stability

Stable
Stable.

Conditions of Instability

Inhibited with 0.05% BHT. Avoid exposure to air any longer than necessary so as to prevent peroxide formation.

Conditions to Avoid

May polymerize on exposure to heat. Heat.

Materials to Avoid

Strong oxidizing agents, Strong acids, Strong bases, Metal chlorates.

Hazardous Decomposition Products

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide

Hazardous Polymerization

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

Causes skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

Causes eye irritation.

Inhalation

Harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion

Harmful if swallowed.

Target Organ(s) or System(s)

Liver, Kidneys, Lungs.

Signs and Symptoms of Exposure

Damage to the liver. Damage to the kidneys. Damage to the lungs. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: PC1050000

Toxicity Data

Oral - Rat: 353 mg/kg (LD50)

Remarks: Behavioral: Convulsions or effect on seizure threshold.
Behavioral: Muscle weakness.

Inhalation - Rat: 660 ppm (LC50)

Remarks: Behavioral: Somnolence (general depressed activity).
Behavioral: Convulsions or effect on seizure threshold.
Behavioral: Change in motor activity (specific assay).

Intraperitoneal - Rat: 200 MG/KG (LD50)

Oral - Mouse: 190 mg/kg (LD50)

Inhalation - Mouse: 145 ppm (LC50)

Intraperitoneal - Mouse: 200 MG/KG (LD50)

Inhalation - Rabbit: 771 ppm (LC50)

Skin - Rabbit: 5080 mg/kg (LD50)

Remarks: Behavioral: Convulsions or effect on seizure threshold.
Behavioral: Muscle weakness.

Inhalation - Guinea pig: 770 ppm (LC50)

Oral - Cattle, Horse: 1200 mg/kg (LD50)

Remarks: Behavioral: Ataxia.
Gastrointestinal: Changes in structure or function of salivary glands.
Nutritional and Gross Metabolic: Weight loss or decreased weight gain.

Intraperitoneal - Mammal: 960 MG/KG (LD50)

Oral - Bird: 1010 mg/kg (LD50)

Irritation Data

Skin - Rabbit: 9.3 mg 24H

Remarks: Open irritation test

Skin - Rabbit: 20 mg 24H

Remarks: Moderate irritation effect

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Dicyclopentadiene

UN#: 2048

Class: 3

Packing Group: Packing Group III

Hazard Label: Flammable liquid

PIH: Not PIH

IATA

Proper Shipping Name: Dicyclopentadiene

IATA UN Number: 2048

Hazard Class: 3

Packing Group: III

Section 15 - Regulatory Information

EU Directives Classification

Symbol of Danger: F Xn N

Indication of Danger

Highly Flammable. Harmful. Dangerous for the environment.

Risk Statements R: 11 20/22 36/37/38 51/53

Highly flammable. Harmful by inhalation and if swallowed. Irritating to eyes, respiratory system and skin. Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

Safety Statements S: 36/37 61

Wear suitable protective clothing and gloves. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Classification and Label Text

Indication of Danger

Flammable (USA) Highly Flammable (EU). Toxic (USA) Harmful (EU).

Risk Statements

Highly flammable. Irritating to eyes, respiratory system and skin.

Safety Statements

Keep away from sources of ignition- no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of insufficient ventilation, wear suitable respiratory equipment. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements

Target organ(s): Liver. Kidneys. Lungs.

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. SigmaAldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.