

Material Safety Data Sheet

Version 5.2

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Dicyclopentadiene
 Product Number : 112798
 Brand : Aldrich
 Supplier : Sigma-Aldrich
 3050 Spruce Street
 SAINT LOUIS MO 63103
 USA
 Telephone : +1 800-325-5832
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 Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555
 Preparation Information : Sigma-Aldrich Corporation
 Product Safety - Americas Region
 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Flammable liquid, Target Organ Effect, Toxic by inhalation., Harmful by ingestion., Irritant

Target Organs

Liver, Kidney, Lungs

GHS Classification

Flammable liquids (Category 3)
 Acute toxicity, Oral (Category 4)
 Acute toxicity, Inhalation (Category 3)
 Skin irritation (Category 2)
 Eye irritation (Category 2A)
 Specific target organ toxicity - single exposure (Category 3)
 Acute aquatic toxicity (Category 2)
 Chronic aquatic toxicity (Category 2)

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H226 Flammable liquid and vapour.
 H302 Harmful if swallowed.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H331 Toxic if inhaled.
 H335 May cause respiratory irritation.
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

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

P273
P305 + P351 + P338

Avoid release to the environment.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor/ physician.

P311

HMIS Classification

Health hazard: 2
Chronic Health Hazard: *
Flammability: 3
Physical hazards: 0

NFPA Rating

Health hazard: 4
Fire: 3
Reactivity Hazard: 0

Potential Health Effects

Inhalation Toxic if inhaled. Causes respiratory tract irritation.
Skin Harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight : 132.20 g/mol

Component		Classification	Concentration
3a,4,7,7a-Tetrahydro-4,7-methanoindene			
CAS-No.	77-73-6	Flam. Liq. 2; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; Aquatic Chronic 2; H225, H302 + H332, H315, H319, H335, H411	60 - 100 %
EC-No.	201-052-9		
Index-No.	601-044-00-9		

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours 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 (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

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.

Store under inert gas.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
3a,4,7,7a-Tetrahydro-4,7-methanoindene	77-73-6	TWA	5 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Upper Respiratory Tract, Lower Respiratory Tract & eye irritation			
		TWA	5 ppm 30 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	5 ppm 30 mg/m ³	USA. NIOSH Recommended Exposure Limits
	Exists in two stereoisomeric forms.			

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face 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 full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	clear, liquid
Colour	light yellow

Safety data

pH	no data available
Melting point/freezing point	Melting point/range: ca.32.5 °C (90.5 °F)
Boiling point	164 - 168 °C (327 - 334 °F) at 1,013 hPa (760 mmHg)
Flash point	32 °C (90 °F) - closed cup
Ignition temperature	510 °C (950 °F) - Auto-flammability
Autoignition temperature	no data available
Lower explosion limit	1 %(V)
Upper explosion limit	10 %(V)
Vapour pressure	13.00 hPa (9.75 mmHg) at 37.7 °C (99.9 °F) 1.86 hPa (1.40 mmHg) at 20 °C (68 °F)
Density	0.98 g/cm ³ at 20 °C (68 °F)
Water solubility	0.04 g/l at 20 - 25 °C (68 - 77 °F)
Partition coefficient: n-octanol/water	log Pow: 2.89 at 20 °C (68 °F)
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Strong oxidizing agents, Strong acids, Strong bases

Hazardous decomposition products

Other decomposition products - no data available

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Contains the following stabiliser(s):

4-tert-Butylpyrocatechol (0.015 %)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50

LD50 Oral - rat - 590 mg/kg

Inhalation LC50

LC50 Inhalation - rat - 4 h - 500 - 1000 ppm

Dermal LD50

LD50 Dermal - rabbit - 5,080 mg/kg

Other information on acute toxicity

LD50 Intraperitoneal - rat - 200 mg/kg

Skin corrosion/irritation

Skin - rabbit - irritating - OECD Test Guideline 404

Serious eye damage/eye irritation

Eyes - rabbit - Irritating to eyes. - OECD Test Guideline 405

Respiratory or skin sensitization

guinea pig - Did not cause sensitization on laboratory animals.

Germ cell mutagenicity

Genotoxicity in vitro - Ames test - S. typhimurium - negative

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation

Toxic if inhaled. Causes respiratory tract irritation.

Ingestion	Harmful if swallowed.
Skin	Harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects

no data available

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - <i>Ictalurus punctatus</i> - 16.0 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - <i>Daphnia magna</i> (Water flea) - 11 mg/l - 48 h
Toxicity to algae	EC50 - SELENASTRUM - > 100 mg/l - 96 h
Toxicity to bacteria	IC50 - Protozoa - 5.3 mg/l - 24 h

Persistence and degradability

Biodegradability	Biotic/Aerobic
	Result: 1.6 % - Not readily biodegradable.

Bioaccumulative potential

Bioaccumulation	<i>Lepomis macrochirus</i> (Bluegill) - 96 h
	Bioconcentration factor (BCF): 53

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2048	Class: 3	Packing group: III
Proper shipping name: Dicyclopentadiene		
Reportable Quantity (RQ):		
Marine pollutant: No		
Poison Inhalation Hazard: No		

IMDG

UN number: 2048	Class: 3	Packing group: III	EMS-No: F-E, S-D
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Proper shipping name: DICYCLOPENTADIENE
Marine pollutant: No

IATA

UN number: 2048 Class: 3 Packing group: III
Proper shipping name: Dicyclopentadiene

15. REGULATORY INFORMATION

OSHA Hazards

Flammable liquid, Target Organ Effect, Toxic by inhalation., Harmful by ingestion., Irritant

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
3a,4,7,7a-Tetrahydro-4,7-methanoindene	77-73-6	2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
3a,4,7,7a-Tetrahydro-4,7-methanoindene	77-73-6	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
3a,4,7,7a-Tetrahydro-4,7-methanoindene	77-73-6	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
3a,4,7,7a-Tetrahydro-4,7-methanoindene	77-73-6	2007-07-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Text of H-code(s) and R-phrases mentioned in Section 3

Acute Tox.	Acute toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H302 + H332	Harmful if swallowed or if inhaled
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure

Further information

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