



# (-)-MENTHOL (1,2,6,6-D4, 98%)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Issue date: 12/30/2010 Revision date: 7/24/2023 Supersedes: 1/29/2019 Version: 2.2

### SECTION 1: Identification

#### 1.1. Identification

Product form	: Substance
Substance name	: (-)-MENTHOL (1,2,6,6-D4, 98%)
CAS-No.	: 2216-51-5
Product code	: DLM-4412
Formula	: C10H20O
Synonyms	: (1R,2S,5R)-2-Isopropyl-5-methylcyclohexanol / (1R,2S,5R)-(-)-Menthol / 5-Methyl-2-(1-methylethyl)cyclohexanol / (-)-Menthol / (1R,2S,5R)-2-Isopropyl-5-methylcyclohexanol

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

Cambridge Isotope Laboratories, Inc.  
50 Frontage Rd  
01810  
ANDOVER, MA, 01810  
USA  
T 1-800-322-1174  
[cilsales@isotope.com](mailto:cilsales@isotope.com) - [www.isotope.com](http://www.isotope.com)

#### 1.4. Emergency telephone number

Emergency number : 1-703-741-5970  
Chemtrec 1-800-424-9300 24 hours

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335	May cause respiratory irritation

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H315 - Causes skin irritation  
H318 - Causes serious eye damage  
H335 - May cause respiratory irritation

Precautionary statements (GHS US) :

P261 - Avoid breathing dust, gas, fume, mist, vapors, spray.  
P264 - Wash Both hands thoroughly after handling.  
P271 - Use only outdoors or in a well-ventilated area.

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P280 - Wear protective clothing, protective gloves.  
P302+P352 - If on skin: Wash with plenty of water.  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 - Immediately call a doctor, a POISON CENTER.  
P312 - Call a doctor, a POISON CENTER if you feel unwell.  
P321 - Specific treatment (see Comply with applicable regulations on this label).  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.  
P501 - Dispose of contents/container to Comply with applicable regulations.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Name	Product identifier	%	GHS US classification
(-)-MENTHOL (1,2,6,6-D4, 98%) (Main constituent)	CAS-No.: 2216-51-5	100	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice (show the label where possible). Evacuate danger area.  
First-aid measures after inhalation : When symptoms occur: go into open air and ventilate suspected area. If not breathing give artificial respiration. Get medical advice/attention.  
First-aid measures after skin contact : Wash with plenty of soap and water. and soap. Get immediate medical advice/attention.  
First-aid measures after eye contact : Rinse cautiously with water for several minutes.  
First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention.

### 4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.  
Symptoms/effects after inhalation : May be harmful if inhaled. May cause respiratory irritation.  
Symptoms/effects after skin contact : Causes skin irritation.  
Symptoms/effects after eye contact : Causes serious eye damage.  
Symptoms/effects after ingestion : May be harmful if swallowed.

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### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Suitable extinguishing agents: Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

### 5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Carbon oxides (CO, CO<sub>2</sub>).

### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Fight fire with normal precautions from a reasonable distance. Wear a self contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear recommended personal protective equipment.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Avoid breathing vapors, mist, gas. Avoid dust formation.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses. Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

For containment : Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal.

Methods for cleaning up : This material and its container must be disposed of in a safe way, and as per local legislation.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation to minimize dust and/or vapor concentrations.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Store in a well-ventilated place. Keep container tightly closed.

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Storage conditions : Store at room temperature away from light and moisture.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

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No additional information available

#### 8.2. Appropriate engineering controls

Appropriate engineering controls : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Environmental exposure controls : Avoid release to the environment.

#### 8.3. Individual protection measures/Personal protective equipment

##### Personal protective equipment:

Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.

##### Materials for protective clothing:

Wear suitable protective clothing and gloves

##### Hand protection:

Wear suitable protective clothing and gloves

##### Eye protection:

Wear eye protection. Chemical goggles or face shield with safety glasses

##### Skin and body protection:

Wear suitable protective clothing, gloves and eye/face protection

##### Respiratory protection:

In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator

##### Personal protective equipment symbol(s):



### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state : Solid  
Appearance : Low melting solid.  
Color : Colorless  
Odor : No data available  
Odor threshold : No data available  
pH : No data available  
Melting point : 43 °C (109 °F)  
Freezing point : No data available  
Boiling point : 212 °C (414 °F) at 1,013 hPa (760 mmHg)

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Flash point	: 101 °C (214 °F) - closed cup
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: 0.89 g/cm <sup>3</sup> at 20 °C (68 °F)
Molecular mass	: 160.29 g/mol (Labeled)
Solubility	: Water: 0.397 g/l
Partition coefficient n-octanol/water (Log Pow)	: 3.25
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable if stored under recommended conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

Strong oxidizing agents.

### 10.6. Hazardous decomposition products

carbon oxides.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

#### (-)-MENTHOL (1,2,6,6-D4, 98%) (2216-51-5)

LD50 oral rat	2615 mg/kg
LD50 dermal rabbit	> 5000 mg/kg
ATE US (oral)	2615 mg/kg body weight

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(-)-MENTHOL (1,2,6,6-D4, 98%) (2216-51-5)	
Additional data	LD50 Intraperitoneal - Rat - 700 mg/kg Remarks: Behavioral: General anesthetic. Behavioral: Altered sleep time (including change in righting reflex). Respiratory disorder. LD50 Intraperitoneal - Cat - 800 mg/kg LD50 Subcutaneous - Rat - 1,000 mg/kg LD50 Subcutaneous - Mouse - 5,000 mg/kg
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: May be harmful if swallowed.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

(-)-MENTHOL (1,2,6,6-D4, 98%) (2216-51-5)	
LC50 - Fish [1]	15.6 mg/l Brachydanio rerio (zebrafish) - 96 h
EC50 - Crustacea [1]	26.6 mg/l Daphnia magna (Water flea) - 48 h (Tested according to Directive 92/69/EEC.)
EC50 - Other aquatic organisms [1]	237 mg/l activated sludge (OECD Test Guideline 209)
ErC50 algae	21.4 mg/l Desmodesmus subspicatus (Green algae) - 72 h (Tested according to Directive 92/69/EEC.)

### 12.2. Persistence and degradability

(-)-MENTHOL (1,2,6,6-D4, 98%) (2216-51-5)	
Persistence and degradability	Not available.
Biodegradation	92 % Readily biodegradable (OECD Test Guideline 301D)

### 12.3. Bioaccumulative potential

(-)-MENTHOL (1,2,6,6-D4, 98%) (2216-51-5)	
Partition coefficient n-octanol/water (Log Pow)	3.25
Bioaccumulative potential	Indication of bioaccumulation.

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### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Other adverse effects : Disposal must be done according to official regulations. Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.

Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Ecology - waste materials : Dispose of as unused product.

## SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

### 14.1. UN number

Not regulated for transport

### 14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable

Proper Shipping Name (TDG) : Not applicable

Proper Shipping Name (IMDG) : Not applicable

Proper Shipping Name (IATA) : Not applicable

### 14.3. Transport hazard class(es)

#### DOT

Transport hazard class(es) (DOT) : Not applicable

#### TDG

Transport hazard class(es) (TDG) : Not applicable

#### IMDG

Transport hazard class(es) (IMDG) : Not applicable

#### IATA

Transport hazard class(es) (IATA) : Not applicable

### 14.4. Packing group

Packing group (DOT) : Not applicable

Packing group (TDG) : Not applicable

Packing group (IMDG) : Not applicable

Packing group (IATA) : Not applicable

### 14.5. Environmental hazards

Other information : No supplementary information available.

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### 14.6. Special precautions for user

Special transport precautions : Not classified as dangerous in the meaning of transport regulations

#### DOT

No data available

#### TDG

No data available

#### IMDG

No data available

#### IATA

No data available

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### (-)-MENTHOL (1,2,6,6-D4, 98%) (2216-51-5)

SARA Section 302 Threshold Planning Quantity (TPQ)

Not subject to reporting requirements of the United States SARA Section 302.

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
(-)-MENTHOL (1,2,6,6-D4, 98%)	2216-51-5	Not present	-	

### 15.2. International regulations

#### CANADA

#### (-)-MENTHOL (1,2,6,6-D4, 98%) (2216-51-5)

Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

No additional information available

#### National regulations

#### (-)-MENTHOL (1,2,6,6-D4, 98%) (2216-51-5)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on TECI (Thailand Existing Chemicals Inventory)

### 15.3. US State regulations

No additional information available

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Other information

: This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of H-phrases	
H315	Causes skin irritation
H318	Causes serious eye damage
H335	May cause respiratory irritation

Safety Data Sheet (SDS), USA

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