

# SAFETY DATA SHEET

Preparation Date: 11/19/2015

Revision Date: 11/19/2015

Revision Number: G1

## 1. IDENTIFICATION

### Product identifier

Product code: L1599  
Product Name: D-LIMONENE, FOOD GRADE

### Other means of identification

Synonyms: (+)-4-Isopropenyl-1-methylcyclohexene  
(+)-R-Limonene  
(R)-1-Methyl-4-(1-methylethenyl)cyclohexene  
1-Methyl-4-(1-methylethenyl)cyclohexene  
Cajeputene  
Carvene  
Cinene  
Cyclohexene, 4-isopropenyl-1-methyl-  
D-(+)-Limonene  
R-(+)-Limonene  
d-Limoneno (Spanish)  
d-p-Mentha-1,8-diene  
p-Mentha-1,8-diene  
p-Mentha-1,8-diene, (R)-(+)-  
optical isomer of Dipentene  
CAS #: 5989-27-5  
RTECS #: GW6360000  
CI#: Not available

### Recommended use of the chemical and restrictions on use

Recommended use: Cosmetics. Flavoring ingredient. Fragrance ingredient. Solvent.  
Uses advised against: No information available

Supplier: Spectrum Chemical Mfg. Corp  
14422 South San Pedro St.  
Gardena, CA 90248  
(310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number: Chemtrec 1-800-424-9300  
Contact Person: Martin LaBenz (West Coast)  
Contact Person: Ibad Tirmiz (East Coast)

## 2. HAZARDS IDENTIFICATION

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Aspiration toxicity	Category 1
Flammable liquids	Category 3

#### **Label elements**

#### **Danger**

#### **Hazard statements**

Causes skin irritation  
Causes serious eye irritation  
May cause an allergic skin reaction  
May be fatal if swallowed and enters airways  
Flammable liquid and vapor



#### **Hazards not otherwise classified (HNOC)**

Not Applicable

#### **Other hazards**

May be harmful if swallowed

#### **Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Contaminated work clothing should not be allowed out of the workplace  
Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting/./? /equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Wear protective gloves  
Wear eye/face protection

#### **Precautionary Statements - Response**

*Specific treatment (see .? on this label)*

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam to extinguish.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

If skin irritation or rash occurs: Get medical advice/attention

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Do NOT induce vomiting

**Precautionary Statements - Storage**

Store locked up

Store in a well-ventilated place. Keep cool

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**3. COMPOSITION/INFORMATION ON INGREDIENTS****4. FIRST AID MEASURES****First aid measures****General Advice:**

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

**Skin Contact:**

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

**Eye Contact:**

Flush eyes with water for 15 minutes. Get medical attention.

**Inhalation:**

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

**Ingestion:**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

**Most important symptoms and effects, both acute and delayed****Symptoms**

Causes serious eye irritation. Moderately irritating to the skin. May cause allergic skin reaction. Aspiration hazard if swallowed - can enter the lungs and cause damage. Aspiration into the lungs may cause pulmonary edema. Aspiration into the lungs may cause chemical pneumonitis. Causes digestive (gastrointestinal) tract irritation. May cause abdominal pain, nausea, vomiting, diarrhea. Central nervous system effects. Weak, rapid pulse or rapid heart rate (Tachycardia). May affect the liver. It may affect the kidneys. May affect respiration. Respiratory depression. Dyspnea (Difficulty breathing and shortness of breath).

**Indication of any immediate medical attention and special treatment needed****Notes to Physician:**

Treat symptomatically

**Protection of first-aiders**

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

**5. FIRE-FIGHTING MEASURES****Extinguishing Media****Suitable Extinguishing Media:**

Carbon dioxide (CO<sub>2</sub>). Dry chemical. Water spray mist or foam. Alcohol-resistant foam.

**Unsuitable Extinguishing Media:**

Do not use a solid (straight) water stream as it may scatter and spread fire.

**Specific hazards arising from the chemical****Hazardous Combustion Products:**

Carbon monoxide; Carbon dioxide

**Specific hazards:**

Flammable  
May be ignited by heat, sparks or flames  
Vapor may travel considerable distance to source of ignition and flash back  
Vapors may form explosive mixtures with air  
Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks)  
Container explosion may occur under fire conditions or when heated  
Fire may produce irritating, corrosive and/or toxic gases

**Special Protective Actions for Firefighters****Specific Methods:**

Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

**Special Protective Equipment for Firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures****Personal Precautions:**

Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

**Methods and material for containment and cleaning up****Methods for containment**

Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth). In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**

Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use clean non-sparking tools to collect absorbed material. Clean contaminated surface thoroughly.

**7. HANDLING AND STORAGE****Precautions for safe handling****Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

**Safe Handling Advice**

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

## Conditions for safe storage, including any incompatibilities

### **Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store in a segregated and approved area. Store away from incompatible materials. Air sensitive.

### **Incompatible Materials:**

Oxidizing agents.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### Control parameters

### **National occupational exposure limits**

United States

Canada

Australia and Mexico

### Appropriate engineering controls

### **Engineering measures to reduce exposure:**

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

### Individual protection measures, such as personal protective equipment

### **Personal Protective Equipment**

**Eye protection:** Goggles.

**Skin and body protection:** Chemical resistant apron. Long sleeved clothing. Gloves.

**Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

**Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

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<b>Physical state:</b> Liquid.	<b>Appearance:</b> Clear.	<b>Color:</b> Colorless.
<b>Odor:</b> Pleasant. Lemon-like.	<b>Taste</b> Fresh. Citrus.	<b>Formula:</b> C10-H16
<b>Molecular/Formula weight:</b> 136.23	<b>Flammability:</b> No information available	<b>Flash point (°C):</b> 45
<b>Flashpoint (°C/°F):</b> 45-48°C/113.4-118.4 °F	<b>Flash Point Tested according to:</b> Closed cup	<b>Autoignition Temperature (°C/°F):</b> 237°C/458.6°F
<b>Lower Explosion Limit (%):</b> 0.7%	<b>Upper Explosion Limit (%):</b> 6.1%	<b>pH:</b> No information available
<b>Melting point/range(°C/°F):</b> -95.5 to -74 °C/- 139.9 to -102.1 °F	<b>Boiling point/range(°C/°F):</b> 175-176°C/347-348.8°F	<b>Decomposition temperature(°C/°F):</b> No information available
<b>Bulk density:</b> No information available	<b>Density (g/cm3):</b> No information available	<b>Specific gravity:</b> 0.8402 (0.8380-0.8430) @ 25°C 0.841-0.846 @ 20°C
<b>Vapor pressure @ 20°C (kPa):</b> 0.26	<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> 4.7
<b>VOC content (g/L):</b> No information available	<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> 4.57
<b>Viscosity:</b> No information available	<b>Miscibility:</b> Miscible with Ethanol Miscible with Ether	<b>Solubility:</b> Soluble in Carbon tetrachloride Very slightly soluble in water Solubility in Water: 13.8 mg/L @ 25°C

## 10. STABILITY AND REACTIVITY

### Reactivity

Reactive with oxidizing agents

Reacts violently with a mixture of iodine pentafluoride and tetrafluoroethylene, causing fire and explosion hazard

### Chemical stability

**Stability:** Stable under recommended storage conditions

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Ignition sources. Incompatible materials.

**Incompatible Materials:** Oxidizing agents.

**Hazardous decomposition products:** Carbon monoxide. Carbon dioxide. When heated to decomposition it emits acrid smoke and irritating fumes.

### Other Information

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Principal Routes of Exposure:

Ingestion. Skin. Eyes. Inhalation.

### Acute Toxicity

#### Component Information

#### Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = 4400mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = 5600mg/kg

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = >5000mg/kg

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = No information available

VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

### Symptoms

<b>Skin Contact:</b>	Contact causes skin irritation. Moderately irritating to the skin. It may be absorbed through the skin. May cause burning sensation, itching, redness. May cause allergic skin reaction/rashes/urticaria (hives).
<b>Eye Contact:</b>	Causes serious eye irritation. Moderately irritating to the eyes.
<b>Inhalation</b>	May cause irritation of respiratory tract. May affect respiration (respiratory depression).
<b>Ingestion</b>	Aspiration hazard if swallowed. Aspiration into the lungs can cause chemical pneumonitis. Aspiration may lead to pulmonary edema. May cause digestive (gastrointestinal) tract irritation with nausea, vomiting, diarrhea. May cause abdominal pain. Ingestion may cause coughing and choking due to irritant effects. May affect respiration (dyspnea, respiratory depression). It may cause central nervous system depression. May affect behavior/central nervous system (somnolence, ataxia). It may affect behavior/central nervous system (convulsions, excitement). May cause cyanosis, a bluish discoloration of the skin due to deficient oxygenation of the blood. Urine may smell like violets. May affect the cardiovascular system (tachycardia).

**Aspiration hazard** Aspiration hazard. May be fatal if swallowed and enters airways.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chronic Toxicity** Skin: Sensitizer. May cause allergic skin reaction (allergic contact dermatitis). Prolonged or repeated ingestion may affect the liver. Prolonged or repeated ingestion may affect the liver, and kidneys. Prolonged or repeated ingestion may cause nausea.

**Sensitization:** May cause sensitization by skin contact

**Mutagenic Effects:** Mutations in microorganisms

**Carcinogenic effects:** Not classifiable as to its carcinogenicity to humans.

*ACGIH (American Conference of Governmental Industrial Hygienists)  
IARC (International Agency for Research on Cancer)*

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available

**Developmental Effects:** No information available

**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** central nervous system.

**STOT - repeated exposure** No information available

**Target Organs:** Skin. Liver.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Ecotoxicity effects:** Aquatic environment.

**Persistence and degradability:** No information available

**Bioaccumulative potential:** Potential for bioconcentration in aquatic organisms is high.

**Mobility:** It is expected to have low mobility based upon estimated K<sub>oc</sub>.

## 13. DISPOSAL CONSIDERATIONS

**Disposal Methods**

**Waste from residues / unused products:**

Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal



## 14. TRANSPORT INFORMATION

### DOT

UN-No: UN2052  
Proper Shipping Name: Dipentene  
Hazard Class: 3  
Subsidiary Risk: No information available  
Packing Group: III  
ERG No: 128  
Marine Pollutant: Marine Pollutant  
DOT RQ (lbs): No information available  
Symbol(s): P

### TDG (Canada)

UN-No: UN2052  
Proper Shipping Name: Dipentene  
Hazard Class: 3  
Subsidiary Risk: No information available  
Packing Group: III  
Description: No information available

### ADR

UN-No: UN2052  
Proper Shipping Name: Dipentene  
Hazard Class: 3  
Packing Group: III  
Subsidiary Risk: No information available  
Classification Code: No information available  
Description: No information available  
CEFIC Tremcard No: No information available

### IMO / IMDG

UN-No: UN2052  
Proper Shipping Name: Dipentene  
Hazard Class: 3  
Subsidiary Risk: P  
Packing Group: III  
Description: No information available  
IMDG Page: No information available  
Marine Pollutant: Marine Pollutant  
EMS: F-E  
MFAG: No information available  
Maximum Quantity: No information available

### RID

UN-No: UN2052  
Proper Shipping Name: Dipentene  
Hazard Class: 3  
Subsidiary Risk: No information available  
Packing Group: III  
Classification Code: No information available  
Description: No information available

### ICAO

UN-No: UN2052  
Proper Shipping Name: Dipentene

## 14. TRANSPORT INFORMATION

**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Description:** No information available

### IATA

**UN-No:** UN2052  
**Proper Shipping Name:** Dipentene  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**ERG Code:** 3L  
**Description:** No information available

## 15. REGULATORY INFORMATION

### International Inventories

### U.S. Regulations

#### California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

##### Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

##### Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

### CERCLA/SARA

### U.S. TSCA

### Canada

#### **WHMIS hazard class:**

B3 Combustible liquid  
D2B Toxic materials

#### **Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

### Inventory

### EU Classification

#### R-phrases(s)

R10 - Flammable.  
R38 - Irritating to skin.  
R43 - May cause sensitization by skin contact.  
R50 - Very toxic to aquatic organisms.  
R53 - May cause long-term adverse effects in the aquatic environment.

**Product code:** L1599

**Product name:** D-LIMONENE, FOOD  
GRADE

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**S -phrase(s)**

S 2 - Keep out of the reach of children.

S24 - Avoid contact with skin.

S37 - Wear suitable gloves.

S60 - This material and its container must be disposed of as hazardous waste.

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

**The product is classified in accordance with Annex VI to Directive 67/548/EEC**

**Indication of danger:**

Xi - Irritant.

N - Dangerous for the environment.

**Xi**



**N**

**16. OTHER INFORMATION**

## 16. OTHER INFORMATION

**Preparation Date:** 11/19/2015  
**Revision Date:** 11/19/2015  
**Prepared by:** Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Safety Data Sheet**