

MATERIAL SAFETY DATA SHEET

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

- **Product name:** **d-Limonene**
- **Manufacturer:** Deep South Chemical, Inc.
229 Millstone Road
Broussard, LA 70518 (337) 837-9931
- **For Emergency : Call CHEMTREC 1-800-424-9300**
Outside the U.S.A. (703)-527-3887
- **Chemical Family:** Organic solvent.
- **MSDS Revised:** January 1, 2014

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS Number</u>	<u>%</u>	<u>PEL(OSHA)</u>		<u>TLV(ACGIH)</u>		<u>IDLH</u>
			<u>TWA</u>	<u>STEL</u>	<u>TWA</u>	<u>STEL</u>	
Technical grade d-Limonene	94266-47-4	>93%	N/E	N/E	N/E	N/E	N/E

SECTION 3. HAZARDS IDENTIFICATION, INCLUDING EMERGENCY OVERVIEW

Effects of overexposure:

Inhalation: May be irritating to the nose, throat, and upper respiratory tract.

Eye Contact: Irritation to eyes. Can injure eye tissue.

Skin Contact: Irritating to skin. Prolonged exposure may dry skin.

Ingestion: Harmful if swallowed. May cause vomiting, headache, and other medical problems.

SECTION 4. FIRST AID MEASURES

Eyes: Move victim away from exposure and into fresh air. If irritation persists, seek medical attention. For direct exposure, flush with clean water for 15 minutes. Hold eyelids apart to ensure flushing of the entire eye surface. If irritation persists, seek medical attention.

Inhalation: Move victim away from source of exposure and into fresh air. If irritation persists, seek medical attention. If victim is not breathing, artificial respiration should be administered.

Skin: Remove contaminated clothes. Cleanse affected area thoroughly with soap and water. If irritation persists, seek medical attention. Wash contaminated clothing.

Ingestion: Seek medical attention immediately. Do not induce vomiting. Rinse mouth with water, then drink one glass of water. Do not leave victim unattended. Never give anything by mouth if victim is unconscious, is rapidly losing consciousness, or is convulsing.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point: >110°F (43°C)

Fire fighting measures

Extinguishing Media: Use dry chemical, foam, or CO₂. **Do not use water.**

Decomposition/Combustion Products: Oxides of carbon.

Special Fire Fighting Procedures: SCBA recommended. Smother to exclude air. Handle as an oil fire.

Unusual Fire and Explosive Hazards: Combustible liquid. Keep away from heat, sparks, and open flame.

Flammable Limits:

LEL: 0.7%

UEL: 6.1%

SECTION 6. ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled: Use proper personal protective equipment, including protective gloves and NIOSH approved respirator. Stay upwind and away from spill. Keep all sources of ignition and hot metal surfaces away from spill. If spill is indoors, ventilate area. Keep out of drains, sewers or waterways. Use sand, dirt, or other inert material to contain and soak up large spills. Small spills can be wiped up with cloth.

Waste disposal method: Dispose of according to local, state and federal regulations in an approved disposal facility or recycling facility.

SECTION 7. HANDLING AND STORAGE

Storage: Store in a well-ventilated area with proper fire deterrent systems. Keep container tightly closed when not in use. Store in cool, dry area. Keep away from sources of ignition. Store in full containers. Partially filled containers should be blanketed with nitrogen gas.

Handling: Use proper personal protective equipment. Avoid contact with skin or eyes. Avoid breathing of vapors. Handle in well-ventilated workspace. When handling do not eat, drink, or smoke.

Other precautions: Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat, flame, sparks or other sources of ignition. Product may expand slightly in storage causing pressure to build in the container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Keep work area well ventilated. Mechanical ventilation recommended as necessary.

Protective clothing: Oil resistant gloves and oil resistant apron as appropriate.

Eye protection: Chemical goggles or glasses where splashing may occur.

Respiratory Protection: Not normally required. If vapor concentration becomes high, use NIOSH approved respirators.

Special Protection: Safety shower, eye bath, and washing facilities should be available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Flash Point (CCCFP Method) (°F): >110°F (43°C)

Specific gravity @ 68°F (H₂O = 1): 0.838-0.843

Vapor density (Air = 1): N/D

Vapor pressure @ 20°C: <2.0 mmHg

Evaporation Rate: 0.2 (BuAc=1)

Appearance: Yellow to water-white oil.

Odor: Citric aroma.

Boiling Point (°F): 349°F (176°C)

Melting Point: -140°F (-96°C)

Refractive Index @ 20°C: 1.4710-1.4740

Optical Rotation @ 25°C: +96° - +104°

Water Solubility: Insoluble

SECTION 10. STABILITY AND REACTIVITY

Stability and Reactivity: Stable in normal conditions.

Incompatibility/Materials: Strong oxidizing agents and acidic agents including acidic clays, peroxides, halogens, vinyl chlorides, and iodine pentafluoride.

Hazardous Decomposition Products: Smoke, oxides of carbon.

Hazardous polymerization: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

d-Limonene is not acutely toxic.

Dermal: LD50: >5 g/kg, rabbit

Oral: LD50: >5 g/kg, rabbit



Skin: The skin irritancy of limonene in guinea pigs and rabbits is considered moderate and low, respectively.

Sensitization: d-Limonene is not a sensitizer. Improper storage and handling can lead to oxidation. The oxidized forms of d-Limonene have been shown to be skin sensitizers.

Inhalation: RD50: >1000 ppm

Chronic Toxicity: Not listed as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicological Information: Product may be toxic to aquatic organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal: If spilled, dispose according to local regulations. Recycle waste containers and clean out residues.

Statutory Notification Required: None in UK.

SECTION 14. TRANSPORT INFORMATION

DOT Transport Information: UN2319, Terpene Hydrocarbons, N.O.S. 3 (3.3 for Canada), PG III

SECTION 15. REGULATORY INFORMATION

Toxic Substances Control Act (TCSA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

CERCLA RQ-40 CFR 302.4(a)

Component

none

CERCLA RQ (lbs)

SARA 302 Components-40 CFR 355 Appendix A

Component

none

TPQ(Threshold Planning Quantity) (lbs)

Section 311/312 Hazard Class-40 CFR 370.2

Immediate ()

Delayed ()

Fire (X)

Reactive ()

Sudden Release of Pressure ()

SARA 313-40 CFR 372.65

Component

none

CAS Number

%

SECTION 16. OTHER INFORMATION

NFPA RATING: Health (1) Fire (2) Reactivity (0)

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N/D= No data; N/A = Not available; N/E= Not established