

SAFETY DATA SHEET

Consolidated Chemical & Solvents, LLC

Revision date 30-June-2020

Version 1.2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name D-Limonene
Cas # 5989-27-5

Recommended use of the chemical and restrictions on use

For research use only. Not intended for diagnostic or therapeutic use.

Details of the supplier of the safety data sheet

Consolidated Chemical & Solvents, LLC
405 Business Park Lane
Allentown, PA 18109
484-460-2644

Emergency telephone number

Chemtrec
1.800.424.9300 (Within USA)
+1.703.527.3887 (Outside USA)

2. HAZARDS IDENTIFICATION

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

Classification

Skin corrosion/irritation Category 2
Skin sensitization Category 1
Carcinogenicity Category 1B
Aspiration toxicity Category 1
Flammable liquids Category 3

Label elements

Signal word Danger
Hazard statements Causes skin irritation
May cause an allergic skin reaction
May cause cancer
May be fatal if swallowed and enters airways
Flammable liquid and vapor

Symbols/Pictograms



Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
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
Wear protective gloves
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use only non-sparking tools



Precautionary Statements - Response	Take precautionary measures against static discharge IF exposed or concerned: 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	In case of fire: Use CO ₂ , dry chemical, or foam for extinction
Precautionary Statements - Disposal	Store locked up Store in a well-ventilated place. Keep cool Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Hazards not otherwise classified (HNOC) Not applicable

Other Information

Other hazards Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life.

NFPA	Health hazards	2		HMIS	Health hazards	2
	Flammability	2			Flammability	2
	Stability	1			Physical hazards	1
	Physical and chemical properties	*			Personal protection	-

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS No 5989-27-5
Molecular Weight 136.23
Formula C₁₀H₁₆

Chemical name	CAS No.	Weight-%	Oral LD50	Dermal LD50	Inhalation LC50
D-Limonene	5989-27-5	>98	= 4400 mg/kg (Rat) = 5200 mg/kg (Rat)	> 5 g/kg (Rabbit)	-

4. FIRST AID MEASURES**First Aid Measures**

General advice	Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). If symptoms persist, call a physician.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Call a physician immediately. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with plenty of water. Wash contaminated clothing before reuse. If skin irritation persists, call a physician. Wash off immediately with soap and plenty of water. Consult a physician if necessary. Immediate medical attention is not required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Remove to fresh air Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation Immediate medical attention is required If not breathing, give artificial respiration Artificial respiration and/or oxygen may be necessary Call a physician Oxygen or artificial respiration if needed Move to fresh air in case of accidental inhalation of vapors If symptoms persist, call a physician
Ingestion	Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an



unconscious person. Call a physician or poison control center immediately. Clean mouth with water and drink afterwards plenty of water. Call a physician.
Self-protection of the first aider Remove all sources of ignition. Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians May cause sensitization of susceptible persons. Treat symptomatically.

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

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. Thermal decomposition can lead to release of irritating and toxic gases and vapors. flammable.

Hazardous combustion products Carbon oxides.

Explosion data

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

Protective equipment and precautions for firefighters

Protective equipment and precautions 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 Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. Soak up with inert absorbent material.

7. HANDLING AND STORAGE**Precautions for safe handling**



Advice on safe handling Ensure adequate ventilation, especially in confined areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded. Use with local exhaust ventilation. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Store at room temperature.

Incompatible materials None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.
Skin and Body Protection Wear protective gloves and protective clothing.
Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State liquid
Appearance No information available
Odor No information available

Property

Values

pH No information available
Melting point/freezing point -74 °C
Boiling point 176 °C
Flash point 48 °C CC (closed cup)
Liquid Density 0.84 g/mL
Evaporation rate 1
Upper flammability limits 6.1%
Lower flammability limit 0.7%
Vapor pressure 3 mmHg
Vapor density 4.70
Specific gravity 0.84
Water solubility No information available
Solubility in other solvents No information available
Partition coefficient 4.38



Autoignition temperature	255 °C
Decomposition temperature	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Chemical stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	No information available.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents.
Hazardous Decomposition Products	Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	No data available.
Eye contact	No data available.
Skin Contact	No data available.
Ingestion	No data available.

Information on toxicological effects

Symptoms	No information available.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
D-Limonene 5989-27-5	-	Group 2A Group 3	-	X

IARC (International Agency for Research on Cancer) Group 2A - Probably Carcinogenic to Humans
Not classifiable as a human carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor) X - Present

Numerical measures of toxicity - Product Information

Unknown acute toxicity	No information available
The following values are calculated based on chapter 3.1 of the GHS document	
ATEmix (oral)	4400 mg/kg
ATEmix (dermal)	5000 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity	Very toxic to aquatic life with long lasting effects
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Chemical name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
D-Limonene 5989-27-5	-	35: 96 h Oncorhynchus mykiss mg/L LC50 0.619 - 0.796: 96 h Pimephales	-	-



		promelas mg/L LC50 flow-through		
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0% of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability No information available.
Bioaccumulation No information available.
Mobility No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of wastes This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).
Contaminated packaging Do not reuse container.
Other Information Waste codes should be assigned by the user based on the application for which the product was used.
US EPA Waste Number D001
California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
D-Limonene 5989-27-5	Toxic

14. TRANSPORT INFORMATION

DOT

UN/ID no UN2052
Hazard Class 3
Packing Group III
Proper shipping name Dipentene
Description UN2052, Dipentene, 3, III
Emergency Response Guide Number 128

IMDG

UN/ID no UN2052
Hazard Class 3
Packing Group III
Proper shipping name Dipentene
Description UN2052, Dipentene, 3, III, (48°C c.c.), Marine pollutant
EmS-No F-E, S-E

IATA

UN/ID no UN2052
Hazard Class 3
Packing Group III
Proper shipping name Dipentene
Description UN2052, Dipentene, 3, III
ERG Code 3L

15. REGULATORY INFORMATION

International Inventories

All of the components in the product are on the following Inventory lists



TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC)
ENCS (Japan): Philippines (PICCS)

Chemical name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
D-Limonene	X	X	-	X	-	X	X	X	X	X

X - Listed

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive hazard	Yes

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

16. OTHER INFORMATION

Revision note

No information available

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet