



SAFETY DATA SHEET

1. Identification

Product Identifier	D-limonene	
Other means of identification		
Product code	FC-6240	
Recommended use	Solvent.	
Recommended restrictions	None.	
Manufacturer/supplier/distributor/importer information		
Company name	Full Circle Chemical Company	
Address	1493 Iron St. North Kansas City, MO 64116	
Telephone	(866) 424-3648	
Emergency phone number	PERS	(800) 633-8253
	24 hour Emergency	(800) 633-8253

2. Hazard(s) Identification

Physical hazards	Flammable Liquids	Category 3
Health hazards	Acute toxicity, oral	Category 5
	Eye irritation	Category 2B
	Skin irritation	Category 2
	Aspiration hazard	Category 1
Environmental hazards	Not classified.	
OSHA defined hazards	None.	
Label elements		



Signal word	Danger
Hazard statement	Flammable liquid and vapor. May be harmful if swallowed. Causes skin irritation. Causes eye irritation. May be fatal if swallowed and enters airways.

Precautionary statement	
Prevention	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/ eye protection/ face protection. Wash hands and exposed skin thoroughly after handling.
Response	Call a POISON CENTER/doctor/medical professional if you feel unwell. 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 ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Specific treatment (see section 4 on the Safety Data Sheet). If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. IF SWALLOWED: Immediately call a POISON CENTER/doctor/medical professional. Do NOT induce vomiting.
Storage	Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None.
Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
D-limonene	5989-27-5	>93
Other components below reportable levels		1-10

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Eye contact Rinse with water for at least 15 minutes. Remove contact lenses if present and easy to do so. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur. Only induce vomiting at the instruction of medical personnel.

Most important symptoms/effects, acute and delayed Dermatitis. Rash. May cause an allergic skin reaction.

Indication of immediate medical attention and special treatment needed Provide general support measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to the hospital. Keep victim under observation. Symptoms may be delayed.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Carbon dioxide (CO₂). Dry chemical powder, sand, or earth may be used for small fires only.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source or ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protecting clothing must be worn in case of fire.

Fire-fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards Flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. Ensure adequate ventilation. Remove all sources of ignition. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up	Eliminate all ignition sources. Use only non-sparking tools. Take precautionary measures against static discharge. Keep combustibles away from spilled material. Large spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Small spills: Absorb with earth, sand, or other non-combustible material and transfer to container for later disposal. Clean surface thoroughly to remove residual contamination. Never return spills to original container for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Avoid discharge into areas not consistent with package labeling.

7. Handling and storage

Precautions for safe handling	Do not handle, store or open near an open flame, sources of heat or sources of ignition. Do not smoke. Use explosion proof equipment and non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Keep away from heat, sparks and open flame. Ground/bond container and equipment. Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits	No data available.
Biological limit values	No data available.
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Avoid contact with eyes. Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using do not smoke or use chewing tobacco. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance	
Physical State	Clear liquid.
Color	Colorless.

Odor	Characteristic.
Odor threshold	Not available.
pH	Not applicable
Melting/freezing point	-40°F (-40°C) estimated.
Initial boiling point and boiling range	349°F (176°C) estimated.
Flash point	115°F (46 °C) estimated.
Evaporation rate	Not available.
Flammability	Not available.
Flammability Limits	
Upper	Not available.
Lower	Not available.
Vapor pressure	0.2 kPa (@ 20°C)
Vapor density	4.7 (Air=1)
Specific gravity (water=1)	0.84
Solubility in water	Miscible.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	This product is stable and non-reactive under normal conditions of use.
Chemical stability	Material is stable under normal conditions. Store in a cool dark place.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Oxidizing agents, acids.
Hazardous decomposition products	Carbon dioxide, carbon monoxide.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Do not ingest. Do NOT induce vomiting.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	May cause skin irritation.
Eye contact	Direct contact with eyes causes irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Dermatitis. Rash.
Acute toxicity	May be harmful if swallowed.

Product	Route and Species	LD₅₀
D-limonene (CAS mixture)		
Acute	<i>Oral</i> , rat	4,400 mg/kg estimated
	<i>Dermal</i> , rabbit	>5,000 mg/kg estimated

*Estimates for product may be based on additional component data not shown

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/irritation	Causes eye irritation.
Respiratory sensitization	Not available.
Skin sensitization	Not available.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not expected to be a carcinogen.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
	Not Listed.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity – single exposure	Not classified.
Specific target organ toxicity – repeated exposure	Not classified.
Aspiration hazard	This product in an aspiration hazard.

12. Ecological information

Ecotoxicity	No data available.
Persistence and degradability	No data available.
Bioaccumulative potential	Potential to bioaccumulation is expected to be low.
Mobility in soil	No data available.
Other adverse effects	No data available.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues/unused product	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner. (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may contain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (Contains: d-limonene)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packaging group	III
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Marine pollutant	No

Special precautions for user

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

DOT

This product is not intended to be transported in bulk.



15. Regulatory information

US federal regulations

SARA 302 Extremely hazardous substance

Not listed.

SARA 304 Emergency release notification

Not listed.

SARA 311/312 Hazard Categories

Immediate Hazard - Yes

Delayed Hazard – No

Fire Hazard – Yes

Pressure Hazard – No

Reactivity Hazard – No

SARA 313 (TRI reporting)

Not listed.

16. Other information, including date of preparation or last revision

Issue date 4/1/2015

Revision date 4/1/2015

Version # 1

HMIS® ratings Health: 2
Flammability: 2
Physical hazard: 0

NFPA ratings Health: 2
Flammability: 2
Instability: 0

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, and have been obtained from resources believed to be reliable. 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 related 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 by the text.

Revision information Format, Transport information, Regulatory information