



# SAFETY DATA SHEET

## 1. Identification

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

## 2. Hazard(s) Identification

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



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

<b>Precautionary statement</b>	
<b>Prevention</b>	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.
<b>Response</b>	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.
<b>Storage</b>	Store in a well-ventilated place. Keep cool. Store locked up.
<b>Disposal</b>	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 (CO<sub>2</sub>). 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.

<b>Methods and materials for containment and cleaning up</b>	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.
<b>Environmental precautions</b>	Avoid release to the environment. Avoid discharge into areas not consistent with package labeling.

## 7. Handling and storage

<b>Precautions for safe handling</b>	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.
<b>Conditions for safe storage, including any incompatibilities</b>	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

<b>Occupational exposure limits</b>	No data available.
<b>Biological limit values</b>	No data available.
<b>Appropriate engineering controls</b>	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.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Avoid contact with eyes. Wear safety glasses with side shields (or goggles).
<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves.
<b>Other</b>	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	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

<b>Appearance</b>	
<b>Physical State</b>	Clear liquid.
<b>Color</b>	Colorless.

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

## 10. Stability and reactivity

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

## 11. Toxicological information

### Information on likely routes of exposure

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

<b>Product</b>	<b>Route and Species</b>	<b>LD<sub>50</sub></b>
D-limonene (CAS mixture)		
<b>Acute</b>	<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

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

## 12. Ecological information

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

## 13. Disposal considerations

<b>Disposal instructions</b>	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.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues/unused product</b>	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).
<b>Contaminated packaging</b>	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

<b>UN number</b>	UN1993
<b>UN proper shipping name</b>	Flammable liquids, n.o.s. (Contains: d-limonene)
<b>Transport hazard class(es)</b>	
<b>Class</b>	3
<b>Subsidiary risk</b>	-
<b>Packaging group</b>	III
<b>Special precautions for user</b>	Read safety instructions, SDS, and emergency procedures before handling.
<b>Marine pollutant</b>	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** 4/11/2018

**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