

  
**MATERIAL SAFETY DATA SHEET**

**24 Hour Emergency Telephone No. (Chemtrec) 1-800-424-9300**  
*The emergency number should be used only in the event of an emergency involving a spill, leak, fire, exposure or accident with hazardous materials.*

**I. PRODUCT AND COMPANY IDENTIFICATION**

Trade Name:	Citrus D-Limonene	TCX Product Code:	BP04300
Manufacturer Name:	Texas Citrus Exchange		
Manufacturer Address:	702 E. Expressway 83 Mission, TX 78572		
Manufacturer Phone:	956 585 8321	Manufacturer Fax:	956 585 1655

**II. HAZARDS IDENTIFICATION**

**OSHA Hazards**

Combustible Liquid, Target Organ Effect, Skin sensitizer, Irritant

**GHS Classification**

Flammable liquids (Category 3)  
Acute toxicity, Oral (Category 5)  
Skin irritation (Category 2)  
Eye irritation (Category 2A)  
Skin sensitization (Category 1)  
Acute aquatic toxicity (Category 1)

**GHS Label elements, including precautionary statements**



Signal word: Warning

**Hazard statement(s)**

H226 Flammable liquid and vapor.  
H303 May be harmful if swallowed.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H400 Very toxic to aquatic life.

**Precautionary statement(s)**

P273 Avoid release to the environment.  
P280 Wear protective gloves.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**HMIS Classification:**

HEALTH	2 *
FIRE	2
PHYSICAL	0

**NFPA Rating:**

HEALTH	2
FIRE	2
REACTIVITY	0

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. Causes respiratory tract irritation.  
**Skin** May be harmful if absorbed through skin. Causes skin irritation.  
**Eyes** Causes eye irritation.  
**Ingestion** May be harmful if swallowed.

### III. COMPOSITION/INFORMATION ON INGREDIENTS

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Synonyms : Citrus Stripper Oil, Terpene Hydrocarbons  
Formula : C<sub>10</sub>H<sub>16</sub>  
Molecular Weight : 136.23 g/mol

Name	Concentration (Range)	CAS #	EC #
d-Limonene	100%	5989-27-5	227-813-5

### IV. FIRST AID MEASURES

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**General advice:**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled:**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact:**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact:**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed:**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### V. FIREFIGHTING MEASURES

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**Conditions of flammability**

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

**Suitable extinguishing media**

Use dry chemical or carbon dioxide.

**Special protective equipment for firefighters**

Wear self contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides

**Further information**

Use water spray to cool unopened containers

### VI. ACCIDENTAL RELEASE MEASURES

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**Personal precautions**

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

### VII. HANDLING AND STORAGE

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**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage

### VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**Exposure Guidelines**

Citrus Terpenes 8h TWA=30ppm (AIHA Standard)

TWA = Time Weighted Average

## Personal protective equipment

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

### Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin and body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## XI. PHYSICAL AND CHEMICAL PROPERTIES

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### Appearance

Form: liquid

Color: colourless to pale yellow

### Safety data

Melting point/freezing point:	-96°C (-140°F)
Boiling point:	176 - 177 °C (349 - 351 °F)
Flash point:	48 °C (118 °F) - closed cup
Autoignition temperature:	237°C (458°F)
Lower explosion limit:	0.7 %(V)
Upper explosion limit:	6.1 %(V)
Vapor pressure:	< 2 mmHg at 20 °C (68 °F)
Density:	0.838 to 0.843 at 20 °C (68 °F)
Refractive Index:	1.471 to 1.474 at 20 °C (68 °F)
Water solubility:	Insoluble

## X. STABILITY AND REACTIVITY

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### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

To prevent oxidation prevent long term exposure to air. If storing in a partially filled container, fill headspace with an inert gas such as nitrogen.

### Conditions to avoid

Heat, flames and sparks.

### Materials to avoid

Strong oxidizing agents

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - no data available

## XI. TOXICOLOGICAL INFORMATION

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### Acute Effects

Citrus terpenes have been shown to have low oral toxicity (LD<sub>50</sub>>5 g/kg) and low dermal toxicity (LD<sub>50</sub>> 5g/kg) when tested on rabbits. Citrus terpenes also showed low toxicity by inhalation (RD<sub>50</sub>>1 g/kg) when tested on mice. The skin irritancy of limonene in guinea pigs and rabbits is considered moderate and low, respectively. Inhalation may cause irritation of the nose, throat, and respiratory tract.

### Chronic Effects

This product is not classified as a carcinogen by OSHA, IARC, ACGIH or NTP. This product has not been shown to produce genetic changes when tested on bacterial or animal cells. This product does not contain known

reproductive or developmental toxins. Prolonged or repeated exposure can cause drying or dermatitis of skin. Improper storage and handling may lead to the formation of a possible skin sensitizer.

## **XII. ECOLOGICAL INFORMATION**

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Ecotoxicity: There is no information available at this time for this product. However, a spill may produce significant toxicity to aquatic organisms and ecosystems. Some studies have shown that certain bacteria and fungi have the ability to degrade terpenes, decreasing their toxicity to fish. When spilled, this product may act as an oil, causing a film, sheen, emulsion or sludge at or beneath the surface of a body of water.

Persistence/Degradability: Product is expected to be readily biodegradable.

Bioaccumulation/Accumulation: No appreciable bioconcentration is expected in the environment.

Mobility in Environment: Citrus terpenes volatilize rapidly.

## **XIII. DISPOSAL CONSIDERATIONS**

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### **Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

### **Contaminated packaging**

Dispose of as unused product.

## **XIV. TRANSPORT INFORMATION**

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### **DOT (US)**

UN number: 2319 Class: 3 Packing group: III

Proper shipping name: TERPENE HYDROCARBONS, N.O.S.

Label/Placard: exception §173.150(f) applies.

Marine pollutant: Marine pollutant: Dipentene

Poison Inhalation Hazard: No

ERG No: 128

### **IMDG**

UN number: 2319 Class: 3 Packing group: III EMS-No: F-E, S-D

Proper shipping name: TERPENE HYDROCARBONS, N.O.S.

Marine pollutant: Marine pollutant: Dipentene

### **IATA**

UN number: 2319 Class: 3 Packing group: III

Proper shipping name: TERPENE HYDROCARBONS, N.O.S.

## **XV. REGULATORY INFORMATION**

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### **Global Inventories**

This product is included in the following inventories:

USA (TSCA)<sup>1,2,3</sup>

Canada (DSL)<sup>1,2,3</sup>

Europe (EINECS/ELINCS/Polymer/NLP)<sup>4</sup>

Australia (AICS)<sup>1,2</sup>

Korea (KECL)<sup>1,2,3</sup>

Philippines (PICCS)

Japan (ENCS)<sup>1</sup>

<sup>1</sup> Listed as CAS 5989-27-5 (d-Limonene)

<sup>2</sup> Listed as CAS 68647-72-3 (Terpenes and Terpenoids, sweet orange-oil)

<sup>3</sup> Listed as CAS 68608-34-4 (Terpenes and Terpenoids, citrus-oil)

<sup>4</sup> Listed as CAS 8028-48-6 (Orange, ext.)

The United States FDA lists d-limonene as GRAS in 21 CFR sections 182.20 and 182.6.

d-Limonene is a 100% natural, biodegradable product extracted from the peel of citrus fruit.

**Proposition 65: California Safe Drinking Water and Toxic Enforcement Act of 1986**

This product is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels which would be subject to the proposition.

**SARA Title III (Section 313)**

This substance contains no materials subject to the reporting requirements of SARA Title III (Section 313).

**XVI. Other Information**

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Revised 4/6/2012