

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	d-Limonene (Citrus Terpenes) Raw Material
CAS #	:	5989-27-5
Country of Origin	:	Canada
EINECS #	:	227-813-5
Product use	:	Domestic and Industrial
Supplier	:	New Directions Aromatics Inc.
Address	:	6781 Columbus Road, Mississauga, Ontario, CANADA L5T 2G9
Fax	:	905-362-1926
Telephone number	:	905-362-1915
Emergency phone number	:	(613)-996-6666 CANUTEC 24 HOUR EMERGENCY

2. HAZARDS IDENTIFICATION

Emergency Overview

GHS Classification

Flammable Liquid, Category - 3

Skin Corrosion/Irritation - Category 2

Aspiration Hazard - Category 1

Hazard to the aquatic environment - Short term - Category 1

Hazard to the aquatic environment - Long term - Category 1

GHS Label elements, including precautionary statements

Signal: Danger

Hazard statement(s)

H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H410	Very toxic to aquatic life with long-lasting effects.

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment.
P280	Wear protective gloves, clothing and eye or face protection.
P301+P310	IF SWALLOWED : Immediately call a POISON CENTER or doctor/physician.

P303+P361+P353

IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

P331

Do NOT induce vomiting.

P405

Store locked up.

P501

Dispose of contents/container to local/state/federal regulations.

3. COMPOSITION / INFORMATION INGREDIENTS

Product Name	CAS NO	EC NO	Concentration
Citrus Terpenes	8028- 48-6	-	100 %

4. FIRST AID MEASURES

Eye contact

Immediately flush eyes with plenty of cool water for at least 15 minutes. Get medical attention if irritation occurs.

Skin contact

Remove contaminated clothing. Wash area with soap and water. If irritation occurs, get medical attention.

Inhalation

If inhaled, removed to fresh air. Get medical attention if symptoms appear.

Ingestion

Seek medical attention or contact local poison control center.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media

Sand, earth, dry powder, carbon dioxide.

Unsuitable extinguishing media

Water spray, water jet.

Special protective equipment and precautions for fire-fighters

Wear proper protective equipment. Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.

Special hazards arising from the substance or its combustible products

Hazardous decomposition products may be formed at extreme heat or if burned.

Resulting gases

Carbon oxides.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures.

Equip clean crew with proper protection. Respiratory protection equipment may be necessary.

Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

Methods and materials for containment and cleaning up

Clean up any spills as soon as possible, using an absorbent material to collect it. Use suitable disposal containers.

7. HANDLING AND STORAGE

Precautions for safe handling

No direct lighting. No smoking. Ensure prompt removal from eyes, skin and clothing. Wash hands and other

exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle in accordance with good industrial hygiene and safety procedures.

Conditions for safe storage, including any incompatibilities

Provide local exhaust or general room ventilation to minimize dust and/or vapour concentrations. Keep container closed when not in use.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Eyes

Use of approved face shields or safety glasses.

Skin

If skin contact or contamination of clothing is likely, protective clothing should be worn. Use solvent resistant gloves.

Respiratory

In case of insufficient ventilation, wear suitable respiratory equipment.

Exposure limit values

Citrus Terpene - 8 h TWA = 30 ppm (AIHA Standard)
TWA = Time Weighted Average.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear.
Odor	:	Characteristic odor.
Melting Point/Freezing Point	:	-74 °C to -96.9 °C
Initial b.p and boiling range	:	175.5 to 178 °C @ 763 mmHg.
Flash point	:	47.0°C
Vapor pressure	:	At 14°C: 1 mmHg; At 20°C: about 1.4 mmHg.
Relative density	:	0.838 to 0.850 gr./ml at 20 to 25°C
Solubility (ies)	:	Miscible with alcohol, insoluble in water.
Auto-ignition temperature	:	237 °C
Refractive index	:	1.471 to 1.474 @ 25 °C
Optical rotation	:	Not available.

10. STABILITY AND REACTIVITY

Reactivity

This material presents no significant reactivity hazard.

Chemical stability

Chemically stable.

Possibility of hazardous reactions

Hazardous polymerization will not occur.

Conditions to avoid

Avoid sparks, flame and other heat sources.

Incompatible materials

Strong oxidizing agents, clays and mineral acids. Highly exothermic reaction noted when blended approx 50/50 with Alkylbenzene Sulphonic Acid with possible boil over danger. Similar reaction not noted at lower levels.

Hazardous decomposition products

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral : 50 -150 mg/kg (mouse) : psycholeptic effect [RIFM, TDS]; 3500 mg/kg (mouse) : maximum no effect level [RIFMU, SLR].

Dermal : Moderate irritation [RIFM]. Full strength, 24 hr, under occlusion (rabbit)[RIFM]. Irritant effects [RIFMU]. Full strength to conjunctival sac (rabbit) [TDS].

Carcinogenicity

Oral : TDlo = 67 g/kg, 39 wk., intermittent administration (mouse): equivocal tumorigenic agent by RTECs criteria [RTEC].

Reproductive toxicity

Oral : TDlo = 3546 - 14178 mg/kg, administered days 7-12 of gestation (pregnant mouse). At dose of 3546 mg/kg, developmental abnormalities of the musculoskeletal system and physical effects on newborns; at dose of 14178 mg/kg, change in growth statistics (e.g. reduced weight gain) [RTEC].

12. ECOLOGICAL INFORMATION

Ecotoxicity

Fish: LC50 - between 0.1 and 1 mg/L; Daphnia: EC50 - between 0.1 and 1 mg/L; Algae: EC50 - between 0.1 and 1 mg/L.

Persistence and degradability

Citrus Terpene is a biodegradable solvent occurring in nature as the main component of citrus peel oil.

Bio - accumulative potential

Not available.

Mobility in soil

Not available.

Other adverse effects

Chemical Oxygen Demand : 2,850 gO₂/l or 3,280 gO₂/kg. Atmospheric half life = c.a. 0.884 to 0.64 hrs.

13. DISPOSAL CONSIDERATION

Dispose of product in accordance with local, state or provincial and federal regulations. Check with local municipal authority to ensure compliance.

14. TRANSPORT INFORMATION

UN Number

2319

UN proper shipping name

Terpene hydrocarbons, n.o.s.

Transport hazard class

3

Packing group

III

US DOT Shipping Description (Land)

2319

Proper shipping name

Terpene hydrocarbons, n.o.s.

Class

3

Packaging group

III

IMO-IMDG Shipping Description (Sea)

2319

Proper shipping name

Terpene hydrocarbons, n.o.s.

Class

3

Packaging group

III

IMO-IMDG code

2319

IMDG-Marine pollution

Yes.

IATA Shipping Description (Air)

2319

Proper shipping name

Terpene hydrocarbons, n.o.s.

Class

3

Packaging group

III

Emergency action in case of accident

Notify police and fire department immediately

15. REGULATORY INFORMATION

DSL / NDSL

Included in the DSL inventory.

TSCA

Included in the TSCA inventory.

California Proposition 65

• This product can expose you to beta-Myrcene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

GHS Hazard Statements

See section 2.

GHS Precautionary Statements

See section 2.

16. OTHER INFORMATION

Revision date : April 21,2022

Disclaimer & Caution

Please refer to all relevant technical information specific to the product, prior to use. The information contained in this document is obtained from current and reliable sources. New Directions Aromatics Inc. provides the information contained herein, but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. The user of the product is solely responsible for compliance with all laws and regulations applying to the use of the products, including intellectual property rights of third parties. As the ordinary or otherwise use(s) of this product is outside the control of New Directions Aromatics Inc., no representation or warranty, expressed or implied, is made as to the effect(s) of such use(s), (including damage or injury), or the results obtained. The liability of New Directions Aromatics Inc. is limited to the value of the goods and does not include any consequential loss. New Directions Aromatics Inc. shall not be liable for any errors or delays in the content, or for any actions taken in reliance thereon. New Directions Aromatics Inc. shall not be responsible for any damages resulting from use of or reliance upon this information. In the event of any dispute, the Customer hereby agree that Jurisdiction is limited to the province of Ontario, Canada.