

**Material Safety Data Sheet**  
**d-Limonene**

**Section 1 - Chemical Product and Company Identification**

**MSDS Name:**

d-Limonene - Americlear

**Catalog Numbers:**

C4200-1

**Synonyms:**

Orange terpenes.

**Company Identification:**

Richard Allan Scientific  
4481 Campus Drive  
Kalamazoo, MI 49008

**Company Phone Number:**

800-522-7270

**Emergency Phone Number:**

800-424-9300

**CHEMTREC Phone Number, US:**

(800) 424-9300

**CHEMTREC Phone Number, Europe:**

(202) 483-7616

**Section 2 - Composition, Information on Ingredients**

CAS#	Chemical Name:	Percent	EINECS/ ELINCS
68647-72-3	d-Limonene	100	Not available

**Section 3 - Hazards Identification**

**EMERGENCY OVERVIEW**

*Appearance: Colorless clear liquid*

*Warning! Flammable liquid and vapor. May cause allergic skin reaction. Causes eye and skin irritation. May cause respiratory tract irritation. Marine pollutant. Flash Point: 112°F.*

*Target Organs: Skin*

**Potential Health Effects**

**Eye:**

Causes eye irritation.

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**Skin:**

Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis.

**Ingestion:**

May cause irritation of the digestive tract. May cause digestive tract disturbances.

**Inhalation:**

May cause respiratory tract irritation. May be harmful if inhaled.

**Chronic:**

No information found.

**Section 4 - First Aid Measures**

**Eyes:**

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, get medical aid.

**Skin:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

**Ingestion:**

Do not induce vomiting. Get medical aid immediately.

**Inhalation:**

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

**Notes to Physician:**

Treat symptomatically and supportively.

**Section 5 - Fire Fighting Measures**

**General Information:**

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Will burn if involved in a fire. Flammable liquid and vapor. This liquid floats on water and may travel to a source of ignition and spread fire.

**Extinguishing Media:**

Use water spray to cool fire-exposed containers. Use foam, dry chemical, or carbon dioxide. Water may be ineffective.

**Autoignition Temperature:**

Not available

**Explosion Limits:**

Lower: 0.7%      Upper: 6.1%

**Flash Point:**

112°F ( 44.44°C)

**NFPA Rating:**

(estimated) Health: 2; Flammability: 2; Instability: 0

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**Section 6 - Accidental Release Measures**

**General Information:**

Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:**

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Forms smooth, slippery surfaces on floors, posing an accident risk. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Do not let this chemical enter the environment.

**Section 7 - Handling and Storage**

**Handling:**

Use with adequate ventilation. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

**Storage:**

Keep away from sources of ignition. Store in a cool, dry place. Do not store in direct sunlight. Store in a tightly closed container. Flammables-area.

**Section 8 - Exposure Controls, Personal Protection**

**Engineering Controls:**

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

**Exposure Limits**

Chemical Name:	ACGIH	NIOSH	OSHA
d-Limonene	None listed	None listed	None listed

**OSHA Vacated PELs**

**Personal Protective Equipment**

**Eyes:**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:**

Wear appropriate protective gloves to prevent skin exposure.

**Clothing:**

Wear appropriate protective clothing to prevent skin exposure.

**Respirators:**

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

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**Section 9 - Physical and Chemical Properties**

**Physical State:** Clear liquid  
**Color:** Colorless  
**Odor:** Citrus-like odor  
**pH:** No information found  
**Vapor Pressure:** < 3 mm Hg @ 14.4°C  
**Vapor Density:** 4.7  
**Evaporation Rate:** slow  
**Viscosity:** No information found  
**Boiling Point:** 176°C  
**Freezing/Melting Point:** No information found  
**Decomposition Temperature:** No information found  
**Solubility in water:** Insoluble.  
**Specific Gravity/Density:** No information found  
**Molecular Formula:** Not applicable.  
**Molecular Weight:** No information found

**Section 10 - Stability and Reactivity**

**Chemical Stability:**

Stable under normal temperatures and pressures.

**Conditions to Avoid:**

Incompatible materials, ignition sources, excess heat

**Incompatibilities with Other Materials**

Strong oxidizing agents

**Hazardous Decomposition Products**

Carbon monoxide, carbon dioxide

**Hazardous Polymerization**

Has not been reported.

**Section 11 - Toxicological Information**

**RTECS:**

CAS# 68647-72-3 unlisted

**LD50/LC50:**

CAS# 68647-72-3:  
No information found

**Carcinogenicity:**

CAS# 68647-72-3: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:**

No information found

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**Teratogenicity:**

No information found

**Reproductive:**

See actual entry in RTECS for complete information.

**Mutagenicity:**

See actual entry in RTECS for complete information.

**Neurotoxicity:**

No information found

**Other:**

The toxicological properties have not been fully investigated.

**Section 12 - Ecological Information**

**Ecotoxicity:**

No information found

**Environmental:**

May bioconcentrate in aquatic organisms and fish. Has low mobility in soil and may rapidly volatilize in the atmosphere. Limonene can be readily degraded in soil.

**Physical:**

No information found

**Other:**

Dipentene, which is optically inactive limonene, is a marine pollutant.

**Section 13 - Disposal Considerations**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Part 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P Series Wastes**

None of the components are on this list.

**RCRA U Series Wastes**

None of the components are on this list.

**Section 14 - Transport Information**

**US DOT**

**Canadian TDG**

**Proper Shipping Name:** TERPENE HYDROCARBONS, N.O.S.  
**Hazard Class:** 3  
**UN Number:** UN2319  
**Packing Group:** III

TERPENE HYDROCARBON S, N.O.S.  
3  
UN2319  
III

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**Section 15 - Regulatory Information**

**US Federal**

**TSCA**

CAS# 68647-72-3 is listed on the TSCA Inventory.

**Health and Safety Reporting List**

None of the components are on this list.

**Chemical Test Rules**

None of the components are on this list.

**TSCA Section 12b**

None of the components are on this list.

**TSCA Significant New Use Rule (SNUR)**

None of the components are on this list.

**CERCLA Hazardous Substances and corresponding RQs**

None of the components are on this list.

**SARA Section 302 Extremely Hazardous Substances**

None of the components are on this list.

**SARA Hazard Categories**

Not available

**SARA Section 313**

None of the components are on this list.

**Clean Air Act - Hazardous Air Pollutants (HAPs)**

None of the components are on this list.

**Clean Air Act - Class 1 Ozone Depleters**

None of the components are on this list.

**Clean Air Act - Class 2 Ozone Depleters**

None of the components are on this list.

**Clean Water Act - Hazardous Substances**

None of the components are on this list.

**Clean Water Act - Priority Pollutants**

None of the components are on this list.

**Clean Water Act - Toxic Pollutants**

None of the components are on this list.

**OSHA - Highly Hazardous**

None of the components are on this list.

**OSHA - Specifically Regulated Chemicals**

None of the components are on this list.

**US State**

**State Right to Know**

No information found

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**California Prop 65**

None of the components are on this list.

**California No Significant Risk Level**

None of the components are on this list.

**European/International Regulations**

**European Labelling in Accordance with EC Directives:**

Hazard Symbols: XI N

Risk Phrases: R 10 Flammable.

R 38 Irritating to skin.

R 43 May cause sensitization by skin contact.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases: S 24 Avoid contact with skin.

S 37 Wear suitable gloves.

S 60 This material and its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

**WGK (Water Danger/Protection)**

No information found

**United Kingdom Occupational Exposure Limits**

No information found

**United Kingdom Maximum Exposure Limits**

No information found

**Canadian DSL/NDSL**

CAS# 68647-72-3 is listed on Canada's DSL List.

**Canadian WHMIS Classifications**

This product has a WHMIS classification of B3, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**

No information found

**Section 16 - Other Information**

No information found

MSDS Creation Date: July 23, 2007

Revision Date: July 30, 2007

*This MSDS is intended for review and guidance in the receipt, storage, handling, use and disposal of product purchased from us, and for no other purpose. Use this product only as directed and in accordance with applicable instructions and warnings provided with the product. Please consult your institution's policies regarding use of this product. If you have obtained this MSDS other than in connection with the supply of this product from us, this MSDS should be consulted for general information only, and should not be relied upon for any purpose. As with the use of all hazardous materials, you should in all instances follow the guidance of the MSDS provided or available with the specific product purchased.*