



Tri-Art Manufacturing Inc.
4 Harvey Street
Kingston, ON, Canada, K7K 5B9
Telephone: (613) 541-0299
Fax: (613) 541-1765

Tri-Art D-Limonene

MSDS Preparation Date (mm/dd/yyyy): 03/30/2013

Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: D Limonene

Synonyms: 4-Isopropenyl-1-Methylcyclohexene

Chemical Family: None Known

Application: Flavor and fragrance.

Distributed By:

Tri-Art Manufacturing

4 Harvey Street, Kingston Ontario Canada K7K 5B

Preparation date of MSDS: 20/March/2013

Telephone number of preparer: 1-866-541-0299

24-Hour Emergency Telephone Number : N/A

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Percentage (W/W)	LD50s and LC50s Route & Species:
D-limonene 5989-27-5	100	Oral LD50 Rat = 4400 mg/kg Dermal LD50 Rabbit > 2000 mg/kg

Note: No additional remark.

3. HAZARDS IDENTIFICATION

Potential Acute Health Effects:

Eye Contact: May irritate eyes. Symptoms include pain, redness and tearing.

Skin Contact: May cause moderate skin irritation. Contains a component which is a known or suspected skin sensitizer.

Inhalation: Vapor may be irritating to throat, lungs and pulmonary tract.

Ingestion: May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4. FIRST AID MEASURES

Eye Contact: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Skin Contact: Remove contaminated clothing and laundry before reuse. Wash contaminated skin with mild soap and water for 15 minutes. Get medical attention if irritation persists.

Inhalation: Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth if victim is rapidly losing consciousness, unconscious or convulsing. Get immediate medical attention.

Notes to Physician: No specific antidote. Treatment based on sound judgment of physician and individual reactions of patient.

5. FIRE FIGHTING MEASURES

Flash Point: 47.22 °C / 117 °F

Flash Point Method: Closed cup.

Autoignition Temperature: 237°C / 458 °F

Flammable Limits in Air (%): Lower: 0.7% Upper: 6.1 % @ 150°C

Extinguishing Media: Use Carbon Dioxide, Dry Chemicals, Foam.

Special Exposure Hazards: Spray extinguishing media directly into base of the flames. Water is unsuitable for use on burning materials, but may be used to cool containers exposed to heat.

Hazardous Decomposition/Combustion Materials (under fire conditions): Oxides of carbon.

Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment.

NFPA RATINGS FOR THIS PRODUCT ARE: HEALTH 2, FLAMMABILITY 2, INSTABILITY 0

HMIS RATINGS FOR THIS PRODUCT ARE: HEALTH 1, FLAMMABILITY 2, REACTIVITY 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures: Wear appropriate protective equipment.

Environmental Precautionary Measures: Prevent entry into sewers or streams, dike if needed.

Procedure for Clean Up: Eliminate all ignition sources. Ventilate area. Absorb with an inert dry material and place in an appropriate waste disposal container.

7. HANDLING AND STORAGE

Handling: Do not ingest. Avoid prolonged contact with eyes or prolonged skin contact. Use good personal hygiene. Properly discard any item soaked with this material, as spontaneous heating may occur.

Storage: Keep away from direct sunlight. Store in original container. Check quality before use if stored for more than 6 months. Store in a cool, dry, well ventilated area, away from heat and ignition sources. Place away from incompatible materials. Store in accordance with good industrial practices.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

Respiratory Protection: If exposure exceeds occupational exposure limits, use an appropriate NIOSH-approved respirator. Organic vapor respirator.

Gloves:

Appropriate chemical resistant gloves should be worn. Oil-resistant gloves.

Skin Protection: The selection of personal protective equipment varies depending upon conditions of use. Impervious clothing.

Eyes: Chemical goggles; also wear a face shield if splashing hazard exists.

Other Personal Protection Data: Ensure that eyewash stations and safety showers are proximal to the work-station location.

Ingredients	Exposure Limit - ACGIH	Exposure Limit - OSHA	Immediately Dangerous to Life or Health - IDLH
D-limonene	Not available.	Not available.	Not Available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.
Color: Colorless
Odor: Citrus.
pH Not Available.
Specific Gravity: 0.8405 @ 25°C
Boiling Point: 175-177°C / 348-349°F
Freezing/Melting Point: -96°C / -140°F
Vapor Pressure: 1.98 mmHg @ 25°C
Vapor Density: 4.7
% Volatile by Volume: Not Available.
Evaporation Rate: Not Available.
Solubility: Insoluble in water.
VOCs: Not Available.
Viscosity: Not Available.
Molecular Weight: Not Available.
Other: Not Available.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable.
Hazardous Polymerization: Will not occur.
Conditions to Avoid: Keep away from heat, sparks and flame. Avoid hot work and sources of ignition on or near empty containers.
Materials to Avoid: Strong oxidizing agents.
Hazardous Decomposition Products: Oxides of carbon. Smoke. Unidentified organic compounds.
Additional Information:
No additional remark.

11. TOXICOLOGICAL INFORMATION

Principle Routes of Exposure

Ingestion: May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Skin Contact: May cause moderate skin irritation. Contains a component which is a known or suspected skin sensitizer.
Inhalation: Vapor may be irritating to throat, lungs and pulmonary tract.
Eye Contact: May irritate eyes. Symptoms include pain, redness and tearing.

Additional Information: Has been shown to cause kidney effects in laboratory animals through ingestion. Similar effects have not been reported in humans. Prolonged or repeated exposure can cause dermatitis and sensitization.

Acute Test of Product:

Acute Oral LD50: Not Available.
Acute Dermal LD50: Not Available.
Acute Inhalation LC50: Not Available.

Carcinogenicity:

Ingredients	IARC - Carcinogens	ACGIH - Carcinogens
D-limonene	Group 3	Not listed.

Carcinogenicity Comment: No additional information available.

Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity: Not Available.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

Ingredients	Ecotoxicity - Fish Species Data	Acute Crustaceans Toxicity:	Ecotoxicity - Freshwater Algae Data
D-limonene	0.619 - 0.796 mg/L LC50 (Pimephales promelas) 96 h flow-through 35 mg/L LC50 (Oncorhynchus mykiss) 96 h	Not Available.	Not Available.

Other Information:

No additional remark.

13. DISPOSAL CONSIDERATIONS

Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Contaminated Packaging: Empty containers should be recycled or disposed of through an approved waste management facility.

14. TRANSPORT INFORMATION

DOT (U.S.):

DOT Shipping Name: TERPENE HYDROCARBONS N.O.S. (D'LIMONENE)

DOT Hazardous Class 3

DOT UN Number: UN2319

DOT Packing Group: III

DOT Reportable Quantity (lbs): Not Available.

Note: No additional remark.

Marine Pollutant: No.

TDG (Canada):

TDG Shipping Name: TERPENE HYDROCARBONS N.O.S.

Hazard Class: 3

UN Number: UN2319

Packing Group: III

Note: Not regulated under the Transportation of Dangerous Goods Act when transported by road or rail in packagings or containers of 450 L or less (waste excluded).

Marine Pollutant: No.

15. REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

Note: Not available.

U.S. Regulatory Rules

Ingredients	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
D-limonene	Not Listed.	Not Listed.	Not Listed.

California Proposition 65: Not Listed.

MA Right to Know List: Not Listed.

New Jersey Right-to-Know List: Not Listed.

Pennsylvania Right to Know List: Not Listed.

WHMIS Hazardous Class:

B3 COMBUSTIBLE LIQUIDS

D2B TOXIC MATERIALS



16. OTHER INFORMATION

Additional Information:

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Disclaimer of Liability:

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