

SECTION 1 - PRODUCT AND COMPANY INFORMATION

Product Name:	: D'Limonene
Product Use:	: Gum and Grease Remover
Supplier Name and Address:	: Corpack Canada 16 Seapark Drive, St. Catharines, ON L2M 6S6
Telephone:	: (905) 682-8888
Emergency Telephone:	: CANUTEC (613) 996-6666

SECTION 2 - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Physical State:	Liquid
GHS Classification:	
Skin Irritation:	Category 3
Eye Irritation:	Category 2B
Acute Toxicity:	Category 4
GHS Label Elements:	
Hazard Pictograms	



Signal Word:	Danger
Hazard Statements:	H226 Flammable liquid and vapour H304 May be fatal if swallowed and enters airways H315 Causes skin irritation H317 May cause allergic skin reaction H410 Very toxic to aquatic life with long lasting effects
Precautionary Statements:	Prevention P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking. P273 Avoid release into the environment P280 Wear protective gloves and use eye protection Response P301+P310 IF SWALLOWED: Immediately call a POISON CENTER, doctor or physician. P302+ P352 IF ON SKIN: Flush with plenty of soap and water P305 IF IN EYES: Flush with plenty of water P332+P313 If skin irritation persists, get medical attention P501 Dispose of contents and their containers in accordance with regional, national, and international regulations.
c	Contact with eyes may cause redness or irritation.

SECTION 3 - COMPOSITION/ INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS

Chemical Name	CAS-No.	EC-No.	Concentration [%]
c	5989-27-5	227-813-5	100

SECTION 4 - FIRST-AID MEASURES

General Advice	: Move out of dangerous area Consult a physician Show this Safety Data Sheet to the doctor in attendance
General Information	: As with any chemical, employees should thoroughly wash hands with soap and water after handling this material. If health disorder happens, call for medical help immediately. Immediately remove any clothing soiled by the product.
Inhalation	: If symptoms of over exposure are experienced, move to fresh air.
Skin Contact	: Wash affected area with copious amounts of soap and water. If irritation develops, seek medical attention.
Eye Contact	: Remove any contact lenses at once. Flush eyes with water for at least 15 minutes. If irritation persists, seek medical attention.
Ingestion	: Seek medical attention immediately. DO NOT induce vomiting. Rinse mouth with water. DO NOT offer water or anything to drink that might cause vomiting. DO NOT administer anything by mouth to an unconscious person. DO NOT leave the victim unattended.
Most important symptoms and effects, both acute and delayed	Skin irritation and skin sensitization. The product may be fatal if swallowed and enters airways. Inhalation may cause irritation of the nose, throat, and respiratory tract.
Indication of any immediate medical attention and special treatment needed	In case of ingestion do not induce vomiting. DO NOT administer anything by mouth to an unconscious person. DO NOT leave victim unattended.

SECTION 5 - FIRE-FIGHTING MEASURES

Suitable extinguishing media	: Carbon dioxide, foam or dry chemical
Specific hazards arising from the chemical	: Do not use water with full jet to prevent fire spreading. In case of fire, the following can be released: carbon monoxide, carbon dioxide, smoke, soot.
Special protective actions for fire-fighters	: Vapours may be irritating to eyes, skin and respiratory tract. Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear.
Special Hazards	: Product contains combustible organic ingredients. Fire may produce dense black smoke containing hazardous products of combustion.
Additional advice	: Cool endangered receptacles with water spray. Collect contaminated firefighting

SAFETY DATA SHEET

D'Limonene

water separately. It must not enter the sewage system. Dispose of fire debris and contaminated firefighting water in accordance with official regulations.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

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| Personal precautions | : Use personal protection recommended in Section 8. Product is slippery when spilled. Isolate the hazard area. Deny entry to unnecessary and unprotected personnel. |
| Environmental precautions | : Prevent further leakage or spillage. Keep away from drains, surface- and ground- water and spoil. Inform respective authorities in case of spillage into water course or sewage system. Do not allow to enter sewers, surface or ground water. |
| Methods and materials for containment/ cleaning up | : Dike spill area and cap leaking containers as necessary to prevent further spreading of spilled material. Absorb spilled liquid with suitable material such as dirt or sand. Eliminate all ignition sources. Use equipment rated for use around combustible materials. Place in appropriate disposal container. Oil soaked rags may spontaneously combust; place in appropriate disposal container. |
| Additional advice | : None |

SECTION 7 - HANDLING AND STORAGE

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| Precautions for safe handling | : Use personal protection equipment as mentioned under "exposure controls/personal protection". Keep away from heat, sparks and flame. Protect against electrostatic charges. Open container slowly to release pressure caused by temperature variations. Do not allow this material to come in contact with eyes. Avoid prolonged contact with skin. Use in well-ventilated areas. Do not breathe vapors. As with any chemical, employees should thoroughly wash hands with soap and water after handling this material. |
| Conditions for safe storage | : Store in a well-ventilated area with proper sprinkler/fire deterrent system. Storage temperatures should not exceed the flash point for extended periods of time. Store away from oxidizing agents. Keep container closed when not in use. Air should be excluded from partially filled containers by displacing with nitrogen or carbon dioxide. Do not cut, drill, grind, weld on or near this container; residual vapors may ignite. |
| Other data | : None. |

SECTION 8 - EXPOSURE CONTROLS/ PERSONAL PROTECTION

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| Control parameters
Exposure Guidelines | : Not available
: Ingredients with limit values that require monitoring at the workplace: CAS 5989-27-5, (R)-p-mentha-1,8-diene AGW (Germany): 110 mg/m ³ , 20 ppm, 2 (II); DFG, Sh, Y
AIHA Standard: 8h TWA=30 ppm |
| Engineering Controls | : Normal building ventilation is usually adequate. Provide exhaust ventilation or other engineering controls to keep the airborne concentration below any regulated limits. Keep away from sparks and flames. |

Exposure Controls

General Protective and Hygienic Measures

: Use personal protective equipment depending on concentration and amount of hazardous substance. Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of the work. Avoid contact with eyes and skin.

Eye/face protection

: Tightly sealed goggles according to EN 166:2001

Skin protection

: Preventative skin protection by use of skin-protection agents is recommended. Use protective gloves. Material of gloves: The selection of suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has to be checked prior to the application. Penetration time of glove material: >480 minutes at layer thickness of 0.425mm (Sol-Vex (37-695) from Ansell). For the permanent contact gloves made of the following materials are suitable: Nitrile rubber, NBR (e.g. following product: Sol-Vex (37-695) from Ansell). As protection from splashes gloves made of the following materials are suitable: PVC Gloves.

Respiratory protection

: Suitable respiratory protection: Filter class A2 (brown colour). Use the rules for application of respiratory protection systems.

Hygiene measures

: Handle in accordance with good industrial hygiene and safety practice
When using do not eat or drink
When using do not smoke
Wash hands before breaks and at the end of the workday

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	: Clear Liquid
Odor:	: Strong Orange Aroma
Odor Threshold:	: Not available
pH:	: Not available
Physical State:	: Liquid at 20°C (68°F)
Melting point	: -96 °C (-141 °F)
Boiling point:	: 176 °C (348.8 °F)
Flash point:	: ≥ 48°C (≥ 118 °F)
Flammable Limits:	: 0.7% LEL; 6.1% UEL
Auto Ignition Temperature:	: 237°C (459 °F)
Evaporation rate:	: 0.2 (BuAc=1)
Flammability (solid, gas):	: Not available
Upper/lower flammability or explosive limits:	: Not available
Vapour pressure:	: < 2 mmHg at 20°C (68°F)
Vapour density:	: 4.7 (Air = 1)
Volatile Organic (VOC) Content:	: > 95% by volume
Relative density (g/mL):	: Not available
Specific Gravity:	: 0.838 - 0.843 at 25°C (77°F)
Water solubility:	: Immiscible
Solubility in other solvents:	: Not available
Partition coefficient (n-octanol/water):	: Kow=4.23 (for d-limonene)
Decomposition temperature:	: Not available
Viscosity:	: 0.923 cP at 25°C (77°F)

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	: Minimal hazard
Chemical Stability	: Stable under normal conditions
Possibility of hazardous reactions	: BHT, an antioxidant, can be added to prevent oxidation. Avoid long-term exposure to air. If storing partially-filled containers, fill headspace with an inert gas such as nitrogen or carbon dioxide.
Conditions to avoid	: Keep away from heat, sparks, and flame.
Incompatible materials	: Strong oxidizing agents and strong acids, including acidic clays, peroxides, halogens, vinyl chloride, and iodine pentafluoride.
Hazardous decomposition products	: Oxides of d-limonene, which can result from improper storage and handling, are known to cause skin sensitization. No decomposition if stored properly.

SECTION 11 - TOXICOLOGICAL INFORMATION

Product Information	
Acute toxicity	: d-Limonene has been shown to have low oral toxicity (LD50>2 g/kg) when tested on rats and showed low dermal toxicity (LD50> 5g/kg) when tested on rabbits. The product may be fatal if swallowed and enters airways. An LC50 is not established. Inhalation may cause irritation of the nose, throat, and respiratory tract. The product is a skin irritant. The product may cause sensitisation by skin contact.
Chronic Effects	: This product is not classified for repeated dose toxicity. This product is not classified as a carcinogen by IARC or U.S. ACGIH, NTP or OSHA. 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.
Likely Routes of Exposure	: Inhalation, skin and eye contact
Symptoms	: Skin irritation and skin sensitisation. The product may be fatal if swallowed and enters airways. Inhalation may cause irritation of the nose, throat, and respiratory tract. Target organs: Eyes, respiratory system and skin

SECTION 12 - ECOLOGICAL INFORMATION

Product Information:	
Toxicity:	: According to the official classification this product may be very toxic to aquatic life. However, due to the physical properties of the product (density and volatility) it will not remain in the environment for an extended period of time. LC50 (fish and daphnia) = 0.1 to 1 mg/L (per REACH dossier)
Persistence and degradability:	: d-Limonene is classified as readily biodegradable.
Bioaccumulative potential:	: The geometric mean of three predicted BCF for d-limonene is 683, i.e. BCF < 2000 L/kg. Consistently the Log Kow is below 4.5. d-Limonene is not bioaccumulative.
Mobility in soil:	: Citrus extractives volatilize rapidly. Citrus extractives are expected to volatilize from soil or water to the air and oxidize to carbon dioxide in the presence of sunlight.
Results of PBT and vPvB assessment:	: d-Limonene is readily biodegradable, and with a predicted BCF of 683 L/kg. All aquatic EC50/LC50 are higher than 0.1mg/L, therefore d-limonene should not be considered

SAFETY DATA SHEET

D'Limonene

environmentally toxic (the official classification includes H410 for long lasting effects on the aquatic toxicity and hence, at least for the time being the substance shall be classified as such). d-Limonene is not PBT.

Other adverse effects: : None listed

SECTION 13 - DISPOSAL CONSIDERATIONS

Product : Sanitary sewer or dry absorbent if available.
For large quantities, contact local environmental department or government authorities
Do not dispose in drains, waterways, or soil
Do not contaminate ponds, or ditches with chemical or the used container

Waste Treatment Methods : Recycling is strongly preferred to disposal or burning. If disposing, please do so in accordance with official regulations in your area. Keep in mind that this product should not be disposed along with household garbage. Do not allow this product to reach any sewage waste system, as it may be detrimental to aquatic life.

Recommendation : Empty contaminated packaging thoroughly. Packaging may be recycled or repurposed after thorough and proper cleaning. Note that this packaging may not be cleansed and disposed of in the same manner as the product.

Moistened Solids (e.g. cloth, pulp, filters) : Moistened solids can be burnt after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

SECTION 14 - TRANSPORT INFORMATION

UNNumber

USDOT/ADR/RID:UN2319(primary),UN1169(alternate),UN1993(alternate)

IMDG: UN2319 (primary),UN1169 (alternate), UN1993 (alternate)

IATA/ICAO:UN2319 (primary),UN1169 (alternate), UN1993 (alternate)

UN proper shipping name

US DOT, ADR/RID, IMDG, IATA/ICAO:

UN2319 – Terpene Hydrocarbons,N.O.S.

UN1169 – Extracts, Aromatic, Liquid

UN1993 – Flammable Liquid,N.O.S. (d-Limonene)

Transport hazard class: 3



Label:3 Flammable Liquid, Symbol fish and tree Label/Placard: exception §173.150(f) applies (US DOT only)

PackingGroup: III

Environmental hazards: Marine pollutant

Special precautions for user: none listed

EMS Number: F-E, S-E

SECTION 15 - REGULATORY INFORMATION

WHMIS Status

WHMIS classification

SAFETY DATA SHEET

D'Limonene

Safety, health and environmental regulations/legislation specific for the substance or mixture

The Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

Chemical safety assessment

A Chemical Safety Assessment has been carried out.

General information: If a health disorder occurs, receive medical attention immediately. Immediately remove any clothing soiled by the product.

After inhalation: Supply fresh air and to be sure call for a doctor. In case of unconsciousness, place patient stably in side position for transportation.

After skin contact: immediately wash with water and soap and rinse thoroughly.

After eye contact: Rinse opened eye for several minutes under running water.

After swallowing: Do not induce vomiting; call for medical help immediately.

Applicable CAS numbers:

8028-48-6 Orange, sweet, extract

5989-27-5 d-limonene, (R)-p-mentha-1,8-diene

94266-47-4 4 Citrus terpenes, citrus ext

68647-72-3 Terpenes and terpenoids, sweet orange oil

68608-34- Terpenes and terpenoids, citrus oil

SECTION 16 - OTHER INFORMATION

Prepared by: Technical Services

Preparation date: 16 September 2018

Telephone number: (905) 682-8888

NOTICE: The data and information presented herein are based upon tests, research and reports which are considered by us to be reliable and believed to be accurate. The data and information are presented without warranty, guarantee or liability on our part, and are presented to the customer for his own consideration, investigation and verification. If user requires independent information on ingredients in this or any other material, we recommend contact with Canadian Centre for Occupational Health and Safety (CCOHS) in Hamilton, Ontario (905 572-4400)