SAFETY DATA SHEETS

1.Identification

1.1GHS Product identifier

Product name	limonene

1.2Other means of identification

Product number	-
Other names	dycom

1.3Recommended use of the chemical and restrictions on use

Identified uses	For industry use only. Fragrances
Uses advised against	no data available

1.4Supplier's details

Company	Peak Supply Co
Address	5664 Cahuenga blvd. North Hollywood CA 91601
Telephone	(818) 308-6227

1.5Emergency phone number

Emergency phone number	
Service hours	Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

2.Hazard identification

2.1Classification of the substance or mixture

Flammable liquids, Category 3

Skin irritation, Category 2

Skin sensitization, Category 1

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

2.2GHS label elements, including precautionary statements

Pictogram(s)	
Signal word	Warning
Hazard statement(s)	H226 Flammable liquid and vapour
	H315 Causes skin irritation
	H317 May cause an allergic skin reaction
	H410 Very toxic to aquatic life with long lasting effects
Precautionary statement(s)	
Prevention	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P233 Keep container tightly closed.
	P240 Ground and bond container and receiving equipment.
	P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.
	P242 Use non-sparking tools.
	P243 Take action to prevent static discharges.
	P280 Wear protective gloves/protective clothing/eye protection/face protection.
	P264 Wash ... thoroughly after handling.
	P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
	P272 Contaminated work clothing should not be allowed out of the workplace.
	P273 Avoid release to the environment.
Response	P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
	P370+P378 In case of fire: Use ... to extinguish.
	P302+P352 IF ON SKIN: Wash with plenty of water/...
	P321 Specific treatment (see ... on this label).
	P332+P313 If skin irritation occurs: Get medical advice/attention.
	P362+P364 Take off contaminated clothing and wash it before reuse.
	P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
	P391 Collect spillage.

Add: 5664 Cahuenga blvd. North Hollywood CA 91601
Tel: (818) 308-6227
Web: www.peaksupplyco.com
Email: Info@PeakSupplyCo.com

Storage	P403+P235 Store in a well-ventilated place. Keep cool.
Disposal	P501 Dispose of contents/container to ...

2.3Other hazards which do not result in classification

none

3.Composition/information on ingredients

3.1Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
limonene	limonene	138-86-3	none	100%

4.First-aid measures

4.1Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

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

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2Most important symptoms/effects, acute and delayed

Liquid irritates eyes; prolonged contact with skin causes irritation. Ingestion causes irritation of gastrointestinal tract. (USCG, 1999)

4.3Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Turpentine, terpenes, and related compounds/

5.Fire-fighting measures

5.1Extinguishing media

Suitable extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2Specific hazards arising from the chemical

Behavior in Fire: Containers may explode. (USCG, 1999)

5.3Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6.Accidental release measures

6.1Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2Environmental precautions

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

6.3Methods and materials for containment and cleaning up

If a spill occurs, clean it up promptly. Don't wash it away. Instead, sprinkle the spill with sawdust, vermiculite, or kitty litter. Sweep it into a plastic garbage bag, and dispose of it as directed on the pesticide product label.

7.Handling and storage

7.1Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2Conditions for safe storage, including any incompatibilities

Store in a flammable liquid storage area or approved cabinet away from ignition sources and corrosive and reacting materials. ... Store in tightly closed containers in a cool, well ventilated area away from heat and incompatible materials.

8.Exposure controls/personal protection

8.1Control parameters

Occupational Exposure limit values

Recommended Exposure Limit: 10 Hour Time-Weighted Average: 100 ppm (560 mg/cu m).

Biological limit values

no data available

8.2Appropriate engineering controls

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

8.3Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. 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. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

9.Physical and chemical properties

Physical state	colourless or light yellow liquid
Colour	PALE YELLOW OR GREENISH-YELLOW LIQUID
Odour	ACQUIRES TEREBINTHINATE ODOR UPON OXIDATION
Melting point/ freezing point	-96°C(lit.)
Boiling point or initial boiling point and boiling range	178°C
Flammability	no data available
Lower and upper explosion limit / flammability limit	Lower flammable limit: 0.7% by volume; Upper flammable limit: 6.1% by volume (at 302 deg F (150°C))
Flash point	45°C(lit.)
Auto-ignition temperature	236.67°C (USCG, 1999)

Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	In water: <1 g/100mL
Partition coefficient n-octanol/water (log value)	log Kow = 4.57
Vapour pressure	<3 mm Hg (14.4 °C)
Density and/or relative density	0.84
Relative vapour density	4.7 (vs air)
Particle characteristics	no data available

10.Stability and reactivity

10.1Reactivity

no data available

10.2Chemical stability

OIL READILY UNDERGOES DETERIORATION

10.3Possibility of hazardous reactions

Flammable when exposed to heat or flame.DIPENTENE may react vigorously with strong oxidizing agents. May react exothermically with reducing agents to release hydrogen gas.

10.4Conditions to avoid

no data available

10.5Incompatible materials

Forms explosive mixture with air. Contact with oxidizers may cause fire and explosion hazard.

10.6Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

11.Toxicological information

Acute toxicity

- Oral: LD50 Mouse oral 5.6-6.6 g/kg
- Inhalation: LC50 Rat inhalation 20 mg/L/1 hr
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Evaluation: There is inadequate evidence in humans for the carcinogenicity of d-limonene. There is sufficient evidence in experimental animals for the carcinogenicity of d-limonene. Overall evaluation: In making its overall evaluation of the carcinogenicity to humans of d-limonene, the Working Group concluded that d-limonene produces renal tubular tumors in male rats by a non-DNA reactive alpha-2u-globulin associated response. Therefore, the mechanism by which d-limonene incr the incidence of renal tubular tumors in male rats is not relevant to humans. d-Limonene is not classifiable as to its carcinogenicity to humans (Group 3). /d-Limonene/

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

12.Ecological information

12.1Toxicity

- Toxicity to fish: LC50; Species: Oncorhynchus mykiss (Rainbow trout); Conditions: static; Concentration: 80 ppm for 96 hr (95% confidence limit: 71.4-88.7 ppm) /92% AI formulated product
- Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water flea) age <24 hr; Conditions: static; Concentration: 17 ppm for 48 hr (95% confidence limit: 11-33 ppm); Effect: intoxication, immobilization /4.0% AI formulated product
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2Persistence and degradability

AEROBIC: Organisms isolated from soil and water were unable to oxidize limonene in laboratory experiments(1). Limonene was listed as a compound difficult to biodegrade and was classified in level 3 (difficult to biodegrade) in a 5 tiered rating system on ease of biodegradability(2). The concentration of limonene between the influent and effluent of aerated treatment lagoons was found to decrease significantly which the author ascribed to a biological removal process although complete documentation was not provided(3). Other studies have indicated that limonene is readily biodegradable under aerobic conditions. Limonene, present at 100 mg/L, reached 73% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(4). Terpene-acclimated inocula prepared from soil obtained from a coniferous forest and hardwood forest in North Carolina degraded limonene with a half-life of approximately 9-20 hours at 23°C following a lag period of 15-23 hours(5). Degradation by unacclimated inocula did not begin until after a 182-hour lag period(5).

12.3Bioaccumulative potential

An estimated BCF of 480 was calculated for limonene(SRC), using a log Kow of 4.57(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is high, provided the compound is not metabolized by the organism(SRC).

12.4Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc for limonene can be estimated to be 1,100(SRC). According to a classification scheme(2), this estimated Koc value suggests that limonene is expected to have low mobility in soil(SRC).

12.5Other adverse effects

no data available

13.Disposal considerations

13.1Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14.Transport information

14.1UN Number

ADR/RID: UN2052 IMDG: UN2052 IATA: UN2052

14.2UN Proper Shipping Name

ADR/RID: DIPENTENE

IMDG: DIPENTENE

IATA: DIPENTENE

14.3Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

14.4Packing group, if applicable

ADR/RID: III IMDG: III IATA: III

14.5Environmental hazards

ADR/RID: yes IMDG: yes IATA: yes

14.6Special precautions for user

no data available

14.7Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

15.Regulatory information

15.1Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
limonene	limonene	138-86-3	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

16.Other information

Information on revision

Creation Date Aug 10, 2017

Add: 5664 Cahuenga blvd. North Hollywood CA 91601
Tel: (818) 308-6227
Web: www.peaksupplyco.com
Email: Info@PeakSupplyCo.com