

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

|                           |                           |
|---------------------------|---------------------------|
| Product Description:      | <b>(+)-Limonene</b>       |
| Cat No. :                 | <b>L04733</b>             |
| Synonyms                  | (+)-Dipentene; D-Limonene |
| Index No                  | 601-096-00-2              |
| CAS No                    | 5989-27-5                 |
| EC No                     | 227-813-5                 |
| Molecular Formula         | C10 H16                   |
| REACH registration number | -                         |

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

|                                |   |
|--------------------------------|---|
| Recommended Use                | Laboratory chemicals.   |
| Sector of use                  | SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites    |
| Product category               | PC21 - Laboratory chemicals   |
| Process categories             | PROC15 - Use as a laboratory reagent  |
| Environmental release category | ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates) |
| Uses advised against           | No Information available  |

### 1.3. Details of the supplier of the safety data sheet

|         |  |
|---------|--|
| Company | Avocado Research Chemicals Ltd.<br>(Part of Thermo Fisher Scientific)<br>Shore Road, Heysham<br>Lancashire, LA3 2XY,<br>United Kingdom<br>Office Tel: +44 (0) 1524 850506<br>Office Fax: +44 (0) 1524 850608 |
|---------|--|

E-mail address [begel.sdsdesk@thermofisher.com](mailto:begel.sdsdesk@thermofisher.com)

### 1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

**Physical hazards**

# SAFETY DATA SHEET

(+)-Limonene

Revision Date 01-Feb-2024

|                                     |                   |
|-------------------------------------|-------------------|
| Flammable liquids                   | Category 3 (H226) |
| <b><u>Health hazards</u></b>        |                   |
| Aspiration Toxicity                 | Category 1 (H304) |
| Skin Corrosion/Irritation           | Category 2 (H315) |
| Skin Sensitization                  | Category 1 (H317) |
| <b><u>Environmental hazards</u></b> |                   |
| Acute aquatic toxicity              | Category 1 (H400) |
| Chronic aquatic toxicity            | Category 1 (H410) |

Full text of Hazard Statements: see section 16

## 2.2. Label elements



Signal Word

Danger

## Hazard Statements

- H226 - Flammable liquid and vapor
- 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 Statements

- P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- P331 - Do NOT induce vomiting
- P405 - Store locked up
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
- P280 - Wear protective gloves/protective clothing
- 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

## 2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

Toxicity to Soil Dwelling Organisms

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

# SAFETY DATA SHEET

(+)-Limonene

Revision Date 01-Feb-2024

## 3.1. Substances

| Component  | CAS No    | EC No             | Weight % | CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567  |
|------------|-----------|-------------------|----------|--|
| D-Limonene | 5989-27-5 | EEC No. 227-813-5 | <=100    | Flam. Liq. 3 (H226)<br>Asp. tox. 1 (H304)<br>Skin Irrit. 2 (H315)<br>Skin Sens. 1 (H317)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410) |

| Component  | Specific concentration limits (SCL's) | M-Factor | Component notes |
|------------|---------------------------------------|----------|-----------------|
| D-Limonene | -                                     | 1        | -               |

| REACH registration number | - |
|---------------------------|---|
|---------------------------|---|

Full text of Hazard Statements: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

|   |   |
|---|---|
| <b>General Advice</b>                     | If symptoms persist, call a physician.  |
| <b>Eye Contact</b>                        | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.   |
| <b>Skin Contact</b>                       | Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.   |
| <b>Ingestion</b>                          | Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward. |
| <b>Inhalation</b>                         | Remove to fresh air. If not breathing, give artificial respiration. Risk of serious damage to the lungs (by aspiration). Get medical attention if symptoms occur.                                   |
| <b>Self-Protection of the First Aider</b> | Use personal protective equipment as required.  |

### 4.2. Most important symptoms and effects, both acute and delayed

None reasonably foreseeable. May cause allergic skin reaction. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

### 4.3. Indication of any immediate medical attention and special treatment needed

**Notes to Physician** Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

#### Suitable Extinguishing Media

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

**Extinguishing media which must not be used for safety reasons**

# SAFETY DATA SHEET

(+)-Limonene

Revision Date 01-Feb-2024

No information available.

## **5.2. Special hazards arising from the substance or mixture**

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. Containers may explode when heated. Vapors may form explosive mixtures with air. Do not allow run-off from fire-fighting to enter drains or water courses.

### **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

## **5.3. Advice for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### **6.1. Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

### **6.2. Environmental precautions**

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

### **6.3. Methods and material for containment and cleaning up**

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

### **6.4. Reference to other sections**

Refer to protective measures listed in Sections 8 and 13.

## **SECTION 7: HANDLING AND STORAGE**

### **7.1. Precautions for safe handling**

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use only non-sparking tools.

### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### **7.2. Conditions for safe storage, including any incompatibilities**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame.

**Technical Rules for Hazardous Substances (TRGS) 510**      Class 3  
**Storage Class (LGK) (Germany)**

### **7.3. Specific end use(s)**

# SAFETY DATA SHEET

(+)-Limonene

Revision Date 01-Feb-2024

Use in laboratories

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

#### Exposure limits

List source(s):

#### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

#### Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

No information available

#### Predicted No Effect Concentration (PNEC)

No information available.

### 8.2. Exposure controls

#### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

#### Personal protective equipment

##### Eye Protection

Goggles (European standard - EN 166)

##### Hand Protection

Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments        |
|----------------|-------------------|-----------------|-------------|-----------------------|
| Natural rubber | See manufacturers | -               | EN 374      | (minimum requirement) |
| Nitrile rubber | recommendations   |                 |             |                       |
| Neoprene       |                   |                 |             |                       |
| PVC            |                   |                 |             |                       |

##### Skin and body protection

Long sleeved clothing.

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

##### Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

##### Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits

# SAFETY DATA SHEET

(+)-Limonene

Revision Date 01-Feb-2024

are exceeded or if irritation or other symptoms are experienced

**Recommended Filter type:** Organic gases and vapours filter Type A Brown conforming to EN14387

## Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Recommended half mask:-** Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

## Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

|   |  |  |
|---|--|--|
| Physical State                          | Liquid   |  |
| Appearance                              | Light yellow                                   |  |
| Odor                                    | sweet  |  |
| Odor Threshold                          | No data available                              |  |
| Melting Point/Range                     | -74 °C / -101.2 °F                             |  |
| Softening Point                         | No data available                              |  |
| Boiling Point/Range                     | 175.4 - 176 °C / 347.7 - 348.8 °F              |  |
| Flammability (liquid)                   | Flammable                                      | On basis of test data                    |
| Flammability (solid,gas)                | Not applicable                                 | Liquid                                   |
| Explosion Limits                        | <b>Lower</b> 0.7 Vol%<br><b>Upper</b> 6.1 Vol% |  |
| Flash Point                             | 48 °C / 118.4 °F                               | <b>Method</b> - No information available |
| Autoignition Temperature                | 255 °C / 491 °F                                |  |
| Decomposition Temperature               | No data available                              |  |
| pH                                      | Not applicable                                 |  |
| Viscosity                               | 0.844 mPas @ 25°C                              |  |
| Water Solubility                        | Insoluble                                      |  |
| Solubility in other solvents            | No information available                       |  |
| Partition Coefficient (n-octanol/water) |  |  |
| Component                               | <b>log Pow</b>                                 |  |
| D-Limonene                              | 4.38   |  |
| Vapor Pressure                          | 2.1 hPa @ 20.0 °C                              |  |
| Density / Specific Gravity              | 0.841  |  |
| Bulk Density                            | Not applicable                                 | Liquid                                   |
| Vapor Density                           | No data available                              | (Air = 1.0)                              |
| Particle characteristics                | Not applicable (liquid)                        |  |

### 9.2. Other information

|                      |  |
|----------------------|--|
| Molecular Formula    | C10 H16                                |
| Molecular Weight     | 136.24                                 |
| Explosive Properties | explosive air/vapour mixtures possible |

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

None known, based on information available

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

# SAFETY DATA SHEET

(+)-Limonene

Revision Date 01-Feb-2024

## Hazardous Polymerization Hazardous Reactions

Hazardous polymerization does not occur.  
None under normal processing.

## 10.4. Conditions to avoid

Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.

## 10.5. Incompatible materials

Acids. Strong oxidizing agents. Strong reducing agents.

## 10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Product Information

#### (a) acute toxicity;

Oral

Based on available data, the classification criteria are not met

Dermal

Based on available data, the classification criteria are not met

Inhalation

Based on available data, the classification criteria are not met

| Component  | LD50 Oral                 | LD50 Dermal              | LC50 Inhalation |
|------------|---------------------------|--------------------------|-----------------|
| D-Limonene | LD50 = 5200 mg/kg ( Rat ) | LD50 > 5 g/kg ( Rabbit ) | -               |

#### (b) skin corrosion/irritation;

Category 2 Based on available data, the classification criteria are not met

#### (c) serious eye damage/irritation;

Based on available data, the classification criteria are not met

#### (d) respiratory or skin sensitization;

Respiratory

Based on available data, the classification criteria are not met

Skin

Based on available data, the classification criteria are not met  
Category 1

May cause sensitization by skin contact

#### (e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

#### (f) carcinogenicity;

Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

#### (g) reproductive toxicity;

Based on available data, the classification criteria are not met

#### (h) STOT-single exposure;

Based on available data, the classification criteria are not met

#### (i) STOT-repeated exposure;

Based on available data, the classification criteria are not met

Target Organs

None known.

#### (j) aspiration hazard;

Category 1

Based on available data, the classification criteria are not met

# SAFETY DATA SHEET

(+)-Limonene

Revision Date 01-Feb-2024

**Symptoms / effects, both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

## 11.2. Information on other hazards

**Endocrine Disrupting Properties** Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

#### Ecotoxicity effects

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

| Component  | Freshwater Fish  | Water Flea | Freshwater Algae |
|------------|--|------------|------------------|
| D-Limonene | LC50: = 35 mg/L, 96h<br>(Oncorhynchus mykiss)<br>LC50: 0.619 - 0.796 mg/L, 96h<br>flow-through (Pimephales promelas) |            |                  |

| Component  | Microtox | M-Factor |
|------------|----------|----------|
| D-Limonene |          | 1        |

### 12.2. Persistence and degradability

#### Persistence

May persist.

#### Degradation in sewage treatment plant

Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

### 12.3. Bioaccumulative potential

Product has a high potential to bioconcentrate

| Component  | log Pow | Bioconcentration factor (BCF) |
|------------|---------|-------------------------------|
| D-Limonene | 4.38    | No data available             |

### 12.4. Mobility in soil

Spillage unlikely to penetrate soil The product is insoluble and floats on water The product evaporates slowly . Is not likely mobile in the environment due its low water solubility. Is not likely mobile in the environment due its low water solubility and propensity to bind to soil particles

### 12.5. Results of PBT and vPvB assessment

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

### 12.6. Endocrine disrupting properties

#### Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

### 12.7. Other adverse effects

#### Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected substance  
This product does not contain any known or suspected substance

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods



# SAFETY DATA SHEET

(+)-Limonene

Revision Date 01-Feb-2024

|  |   |
|--|---|
| <b>Waste from Residues/Unused Products</b> | Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.  |
| <b>Contaminated Packaging</b>              | Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.  |
| <b>European Waste Catalogue (EWC)</b>      | According to the European Waste Catalog, Waste Codes are not product specific, but application specific.  |
| <b>Other Information</b>                   | Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not let this chemical enter the environment. Do not empty into drains. |

## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

|   |           |
|---|-----------|
| <b>14.1. UN number</b>                  | UN2052    |
| <b>14.2. UN proper shipping name</b>    | DIPENTENE |
| <b>14.3. Transport hazard class(es)</b> | 3         |
| <b>14.4. Packing group</b>              | III       |

### ADR

|   |           |
|---|-----------|
| <b>14.1. UN number</b>                  | UN2052    |
| <b>14.2. UN proper shipping name</b>    | DIPENTENE |
| <b>14.3. Transport hazard class(es)</b> | 3         |
| <b>14.4. Packing group</b>              | III       |

### IATA

|   |           |
|---|-----------|
| <b>14.1. UN number</b>                  | UN2052    |
| <b>14.2. UN proper shipping name</b>    | DIPENTENE |
| <b>14.3. Transport hazard class(es)</b> | 3         |
| <b>14.4. Packing group</b>              | III       |

|  |  |
|--|--|
| <b>14.5. Environmental hazards</b>                                   | Dangerous for the environment<br>Product is a marine pollutant according to the criteria set by IMDG/IMO |
| <b>14.6. Special precautions for user</b>                            | No special precautions required.   |
| <b>14.7. Maritime transport in bulk according to IMO instruments</b> | Not applicable, packaged goods   |

## SECTION 15: REGULATORY INFORMATION

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

#### International Inventories

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

| Component | CAS No | EINECS | ELINCS | NLP | IECSC | TCSI | KECL | ENCS | ISHL |
|-----------|--------|--------|--------|-----|-------|------|------|------|------|
|-----------|--------|--------|--------|-----|-------|------|------|------|------|

# SAFETY DATA SHEET

(+)-Limonene

Revision Date 01-Feb-2024

| D-Limonene | 5989-27-5 | 227-813-5 | -   | -   | X    | X    | KE-24397 | X     | X |
|------------|-----------|-----------|---|-----|------|------|----------|-------|---|
| Component  | CAS No    | TSCA      | TSCA Inventory notification - Active-Inactive | DSL | NDSL | AICS | NZIoC    | PICCS |   |
| D-Limonene | 5989-27-5 | X         | ACTIVE  | X   | -    | X    | X        | X     |   |

**Legend:** X - Listed '-' - Not Listed

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

## Authorisation/Restrictions according to EU REACH

| Component  | CAS No    | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|------------|-----------|---|---|---|
| D-Limonene | 5989-27-5 | -   | Use restricted. See item 75.<br>(see link for restriction details)            | -   |

### REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

## Seveso III Directive (2012/18/EC)

| Component  | CAS No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements |
|------------|-----------|---|--|
| D-Limonene | 5989-27-5 | Not applicable  | Not applicable   |

## Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

## Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

## National Regulations

**UK** - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

### WGK Classification

See table for values

| Component  | Germany - Water Classification (AwSV) | Germany - TA-Luft Class |
|------------|---------------------------------------|-------------------------|
| D-Limonene | WGK2                                  |                         |

| Component  | France - INRS (Tables of occupational diseases)      |
|------------|--|
| D-Limonene | Tableaux des maladies professionnelles (TMP) - RG 84 |

| Component | Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81) | Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC) | Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure |
|-----------|--|---|---|
|           |  |   |   |

# SAFETY DATA SHEET

(+)-Limonene

Revision Date 01-Feb-2024

|                                  |  |         |  |
|----------------------------------|--|---------|--|
| D-Limonene<br>5989-27-5 ( ≤100 ) |  | Group I |  |
|----------------------------------|--|---------|--|

## 15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

## SECTION 16: OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3

H304 - May be fatal if swallowed and enters airways  
H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects  
H226 - Flammable liquid and vapor

### Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer Predicted No Effect Concentration (PNEC)

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

### Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

### Training Advice

Chemical incident response training.

**Prepared By**

Health, Safety and Environmental Department

**Creation Date**

29-Jul-2014

**Revision Date**

01-Feb-2024

**Revision Summary**

New emergency telephone response service provider.

**This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.**

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

# **SAFETY DATA SHEET**

**(+)-Limonene**

**Revision Date 01-Feb-2024**

---

**End of Safety Data Sheet**