

Product Code: ISO-LNE**Product Name:** Limonene

Issue date 26-Mar-2015

Revision date 27-Feb-2018

Version 6

1. Identification of the substance | preparation | company | undertaking**Product identifier****Product name** Limonene**Other means of identification****Product code** ISO-LNE
UN/ID no N/A
Synonyms N/A
Registration number(s) CAS: 8028-48-6**Recommended use of the chemical and restrictions on use****Recommended Use** Industry Use.
Uses advised against No information available**Details of the supplier of the safety data sheet**

324 Airport Industrial Dr. Ypsilanti, MI 48198

Emergency telephone number**Company Phone Number** Use CHEMTREC instead of Emergency Phone Number
24 Hour Emergency Phone Number (800) 424-9300
Emergency telephone**2. Hazard Identification****Classification**

| | |
|-----------------------------------|-------------|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2A |
| Skin sensitization | Category 1B |
| Aspiration toxicity | Category 1 |
| Flammable liquids | Category 3 |

Label Elements**EMERGENCY OVERVIEW****DANGER****Hazard Statements:**

Causes skin irritation

Causes serious eye irritation

May cause an allergic skin reaction

May be fatal if swallowed and enters airways

Flammable liquid and vapor

**Appearance** Clear**Physical state** Liquid**Odor** Characteristic Odor**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/ .? /equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/eye protection/face protection.

Precautionary Statements - Response

Specific treatment (see .? on this label).

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

If skin irritation or rash occurs: Get medical advice/attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. Wash contaminated clothing before reuse.

IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.

In case of fire: Use CO₂, dry chemical, or foam to extinguish.

Precautionary Statements - Storage

Store locked up. Store in a well-ventilated place. Keep cool.

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC)**Other Information**

- Toxic to aquatic life
 - Toxic to aquatic life with long lasting effects
- 97.975 % of the mixture consists of ingredient(s) of unknown toxicity

3. Composition/information on Ingredients

Synonyms

INCI: Citrus aurantium var. dulcis.

Chemical Family

Essential oil.

| Chemical Name | CAS No. | Weight-% |
|-----------------|-----------|----------|
| Orange Terpenes | 8028-48-6 | 100 |

4. First Aid Measures

Description of first aid measures**Eye Contact**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Skin contact

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

Inhalation

Remove to fresh air. If breathing is difficult, give oxygen. Move to fresh air in case of accidental inhalation of vapors. If not breathing, give artificial respiration.

Ingestion IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-Fighting Measures

Suitable Extinguishing Media

Use CO₂, dry chemical, or foam.

Unsuitable extinguishing media .

Specific hazards arising from the chemical

FLAMMABLE. Will be easily ignited by heat, sparks or flames.

Hazardous combustion products Irritating or toxic substances may be emitted upon burning, combustion, or decomposition.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge May be ignited by heat, sparks or flames.

Special protective actions for fire-fighters

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

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Remove all sources of ignition. Take precautionary measures against static discharges. Stop leak if you can do it without risk. Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

Methods for cleaning up Cover liquid spill with sand, earth or other non-combustible absorbent material. Sweep up and shovel into suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling

Advice on safe handling Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Remove all sources of ignition.

Conditions for safe storage, including any incompatibilities

Storage Conditions Protect from direct sunlight. Keep containers tightly closed in a dry, cool and well-ventilated

place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

Incompatible materials None known based on information supplied.

8. Exposure Controls/Personal Protection

Control parameters

Exposure guidelines

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|------------------------------|-------------|----------|------------|
| alpha-Pinene 80-56-8 | TWA: 20 ppm | - | - |
| delta-3-Carene 13466-78-9 | TWA: 20 ppm | - | - |
| beta-Pinene 127-91-3 | TWA: 20 ppm | - | - |

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Avoid contact with eyes. Wear safety glasses with side shields (or goggles).

Skin and Body Protection Avoid contact with skin. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. Ensure adequate ventilation, especially in confined areas.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

| | | | |
|-----------------------|-------------------------------|-----------------------|---------------------|
| Physical state | Liquid | Odor | Characteristic Odor |
| Appearance | Clear | Odor threshold | Not applicable |
| Color | Colorless to almost colorless | | |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|---------------------------------------|----------------|-------------------------|
| pH | Not applicable | |
| Melting point / freezing point | Not applicable | |
| Boiling point / boiling range | 176 °C | |
| Flash Point | 48 °C / 118 °F | |
| Evaporation Rate | Not applicable | |
| Flammability (solid, gas) | Not applicable | |
| Flammability Limit in Air | | |
| Upper flammability limit: | Not applicable | |
| Lower flammability limit: | Not applicable | |
| Vapor pressure | 0.06kPa | (20°C) |
| Vapor Density | Not applicable | |
| Specific gravity | 0.843 | (25°C) |
| Water solubility | Not applicable | |

| | |
|-------------------------------------|-------------------|
| Solubility in other solvents | Not applicable |
| Partition coefficient | Not applicable |
| Autoignition Temperature | Not applicable |
| Decomposition temperature | Not applicable |
| Kinematic viscosity | No data available |
| Dynamic viscosity | Not applicable |
| Explosive properties | Not applicable |
| Oxidizing properties | Not applicable |

Other Information

| | |
|-------------------------|----------------|
| Softening point | not applicable |
| Molecular weight | Not applicable |
| VOC content (%) | Not applicable |
| Density | Not applicable |
| Bulk Density | Not applicable |

10. Stability and Reactivity

No data available

Chemical stability

Fire Hazard. Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Extremes of temperature and direct sunlight. Heat, flames and sparks.

Incompatible materials

None known based on information supplied.

Hazardous Decomposition Products

None known based on information supplied.

11. Toxicological Information

Information on likely routes of exposure**Product Information**

| | |
|---------------------|---|
| Inhalation | Avoid breathing vapors or mists. |
| Eye Contact | Avoid contact with eyes. |
| Skin contact | Avoid contact with skin. Irritating to skin. May cause an allergic skin reaction. |
| Ingestion | May be fatal if swallowed and enters airways. |

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

| | |
|----------------------------------|--|
| Skin corrosion/irritation | Irritating to skin. |
| Sensitization | May cause sensitization by skin contact. |
| Germ cell mutagenicity | Not classified. |

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Chemical Name | ACGIH | IARC | NTP | OSHA |
|-------------------------|-------|---------------------|-----|------|
| d-Limonene 5989-27-5 | | Group 2A Group 3 | | X |

IARC (International Agency for Research on Cancer)

Group 2A - Probably Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity This product does not contain any known or suspected reproductive hazards above the threshold value.

STOT - single exposure Not classified.

STOT - repeated exposure Not classified.

Aspiration hazard May be fatal if swallowed and enters airways.

Numerical measures of toxicity - Product Information

Unknown acute toxicity 97.975 % of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

12. Ecological Information

This product contains a chemical which is listed as a marine pollutant according to DOT.

Ecotoxicity

Toxic to aquatic life with long lasting effects

0.431 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available

13. Disposal Considerations

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

14. Transport Information

DOT

| | |
|-----------------------------|--|
| UN/ID no | 2319 |
| Proper Shipping Name | Terpenes, Hydrocarbons, n.o.s. |
| Hazard Class | 3 |
| Packing group | III |
| Marine pollutant | This product contains a chemical which is listed as a marine pollutant according to DOT. |
| Description | (Orange Terpenes) |

ICAO (air)

| | |
|-----------------------------|--------------------------------|
| UN/ID no | 2319 |
| Proper Shipping Name | Terpenes, Hydrocarbons, n.o.s. |
| Hazard Class | 3 |
| Packing group | III |
| Description | (Orange Terpenes) |

IATA

| | |
|-----------------------------|--------------------------------|
| UN/ID no | 2319 |
| Proper Shipping Name | Terpenes, Hydrocarbons, n.o.s. |
| Hazard Class | 3 |
| Packing group | III |
| Description | (Orange Terpenes) |

IMDG

| | |
|-----------------------------|--|
| UN/ID no | 2319 |
| Proper Shipping Name | Terpenes, Hydrocarbons, n.o.s. |
| Hazard Class | 3 |
| Packing group | III |
| EmS-No | F-E, S-D |
| Marine pollutant | This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO |
| Description | (Orange Terpenes) |

RID

| | |
|-----------------------------|--------------------------------|
| UN/ID no | 2319 |
| Proper Shipping Name | Terpenes, Hydrocarbons, n.o.s. |
| Hazard Class | 3 |
| Packing group | III |
| Description | (Orange Terpenes) |

ADR

| | |
|--------------------------------|--------------------------------|
| UN/ID no | 2319 |
| Proper Shipping Name | Terpenes, Hydrocarbons, n.o.s. |
| Hazard Class | 3 |
| Packing group | III |
| Classification code | B1, IB3 |
| Tunnel restriction code | T2, TP1 |
| Description | (Orange Terpenes) |

| |
|-----------------------------------|
| 15. Regulatory Information |
|-----------------------------------|

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute Health Hazard | Yes |
| Chronic Health Hazard | No |
| Fire Hazard | Yes |
| Sudden release of pressure hazard | No |
| Reactive Hazard | No |

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations**U.S. State Right-to-Know Regulations**

This product contains substance(s) regulated by state right-to-know regulations

| Chemical Name | New Jersey | Massachusetts | Pennsylvania | Rhode Island |
|-------------------------|------------|---------------|--------------|--------------|
| alpha-Pinene 80-56-8 | X | X | X | |
| Terpinolene 586-62-9 | X | | | |
| para-Cymene 99-87-6 | | X | X | |

U.S. EPA Label information

EPA Pesticide registration number Not applicable

| |
|------------------------------|
| 16. Other Information |
|------------------------------|

Issue date 26-Mar-2015

Revision date 27-Feb-2018

Revision note

Labeling for environment based on test data

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. Classification and labeling according to the IFRA/IOFI Labeling Manual 2017.

End of Safety Data Sheet