

Version: 4.0

Revision date: 06/06/2024

Product Name: ZESTOVER

Section 1: Identification of the Substance/Mixture and of the Company**Product identifier**

| | |
|----------------|----------|
| Product Name | ZESTOVER |
| Product Number | 772-2012 |

Relevant identified use of the substance/mixture and uses advised against

| | |
|--------------------------|------------------------------|
| Use of Substance/Mixture | Flavor and fragrance agents. |
|--------------------------|------------------------------|

Details of supplier of the SDS

| | |
|-----------|---|
| Company | O'Laughlin Corporation Limited |
| Address | Suite 1704 Chinachem Tower 34 – 37 Connaught Road, Central, Hong Kong |
| Telephone | (852) 2527 1031 |
| Fax | (852) 2529 0231 |
| Website | www.olaughlinco.com |

Emergency telephone number

(852) 2527 1031

Section 2: Hazards Identification**Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Skin corrosion/irritation, Category 2, H315

Sensitisation – skin, Category 1, H317

Labelling elements**Labelling according to Regulation (EC) No 1272/2008****Pictogram****Signal word** **Warning****Hazard Statement**

H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction.

Precautionary statement**Prevention**

P264 - Wash ... thoroughly after handling.

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P302 + P352 -IF ON SKIN: Wash with plenty of soap and water.

P321 - Specific treatment (see ... on this label).

P332 + P313 - If skin irritation occurs: Get medical advice/attention.

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention.

H363 - Wash contaminated clothing before reuse.

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Safety Data Sheet

Version: 4.0

Revision date: 06/06/2024

Product Name: ZESTOVER

P272 - Contaminated work clothing should not be allowed out of the workplace.

P280 - Wear protective gloves.

P391 - Collect spillage.

Storage

P403 - Store in a well-ventilated place.

P403 + P235 - Store in a well-ventilated place. Keep cool.

Disposal

P501 - Dispose of contents/ container in accordance with local/ regional/ national/ international regulations.

Hazards Not Otherwise Classified No information available.

Supplemental Hazard Information No information available.

Section 3: Composition/information on ingredients

| | |
|-----------------------|--|
| Substance Name | 2, 4-DIMETHYL-3-CYCLOHEXENE-1-CARBOXALDEHYDE |
| CAS Number | 68039-49-6 |
| EC Number | 943-728-2 |
| % (w/w) | 100 |

Remarks: The rest unspecified ingredients are impurities, and they are not hazard.

Section 4: First Aid Measures

Description of first aid measures

Skin contact Wash off with soap and plenty of water. Consult a physician.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

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

Inhalation If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

General information

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

Indication of any immediate medical and special treatment needed: No information available.

Section 5: Fire-fighting Measures

Flammable properties

Flash point 64°C

Firefighting

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

Unsuitable extinguish media Do not use a solid water stream as it may scatter and spread fire.

Protective equipment and precautions for firefighters

Specific hazards during firefighting Carbon oxides.

Specific protective equipment for firefighters Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighter's protective clothing will

Version: 4.0

Revision date: 06/06/2024

Product Name: ZESTOVER

Specific methods

General fire hazards

only provide limited protection. Wear self-contained breathing apparatus with a full-face piece operated in the positive pressure demand mode when fighting fires.

Use water spray to cool unopened containers

Static charges generated by emptying package in or near flammable vapor may cause flash fire.

Section 6: Accidental Release Measures

Personal precautions

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

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Section 7: Handling and Storage

Storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Normal measures for preventive fire protection.

Specific end use(s)

No information available.

Section 8: Exposure Controls/Personal Protection

Control parameters: Components with workplace control parameters.

DNEL (Derived No Effect Level) for workers and the general population:

| | Route | Type of effect | DNEL value |
|---------------------------------|------------|------------------------------|-------------------------|
| DNEL for worker | Inhalation | Systemic effects - Long-term | 0.44 mg/m ³ |
| | Dermal | Systemic effects - Long-term | 0.125 mg/kg bw/day |
| DNEL for the general population | Inhalation | Systemic effects - Long-term | 0.108 mg/m ³ |
| | Dermal | Systemic effects - Long-term | 0.062 mg/kg bw/day |
| | Oral | Systemic effects - Long-term | 0.062 mg/kg bw/day |

PNEC (Predicted No Effect Concentration) values:

| Compartment | PNEC |
|-------------|---|
| Water | Freshwater: 7.5 µg/L Marine water: 0.75 µg/L Intermittent releases: 75 µg/L |
| Sediment | Freshwater: 0.226 mg/kg sediment dw Marine water: 0.0226 mg/kg sediment dw |
| STP | 10 mg/L |

Version: 4.0

Revision date: 06/06/2024

Product Name: ZESTOVER

| | |
|---------------------------|----------------------------------|
| Soil | 0.0408 mg/kg soil dw |
| Air | No hazard identified |
| Secondary poisoning, oral | No potential for bioaccumulation |

Exposure controls

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

Personal protective equipment

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).

Hand protection Type of gloves recommended: Butyl rubber. Minimum breakthrough time/ gloves: 480 min. Minimum thickness/ gloves 0.11 mm.

Body protection Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal hazards Wear suitable protective clothing to prevent heat.

Environmental exposure controls Avoid discharge into the environment. According to local regulations, Federal and official regulations.

Industrial hygiene: When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/ or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Section 9: Physical and Chemical Properties

| | |
|----------------------------------|--|
| Appearance | Colorless, clear liquid. |
| Odor | Fresh, green, leafy, herbal aldehydic with citrusy tone. |
| Flash point | 64 °C |
| Specific Gravity | 0.9320 - 0.9400 at 20 °C |
| Refractive Index | 1.4680-1.4750 at 20 °C |
| Acid Value | 2.0 mg KOH/g max. |
| Vapor Pressure | 0.578000 mm/Hg at 25 °C |
| Solubility (ies) | Insoluble in water. |
| Auto ignition temperature | No information available. |
| Viscosity | No information available. |

Section 10: Stability and Reactivity

Version: 4.0

Revision date: 06/06/2024

Product Name: ZESTOVER

| | |
|---|---|
| Reactivity | Stable under normal temperatures and pressures. |
| Chemical stability | Stable at room temperature in closed containers under normal storage and handling conditions. |
| Possibility of hazardous reactions | No hazardous reactions known. |
| Conditions to avoid | No information available. |
| Incompatible materials | Strong oxidizing agents, strong bases, mineral acids. |
| Hazardous decomposition products | No information available. |

Section 11: Toxicological Information

Information on likely routes of exposure:

Inhalation No adverse effects due to inhalation are expected.

Skin contact May be harmful in contact with skin.

Causes skin irritation.

May cause an allergic skin reaction.

Eye contact Causes serious eye irritation.

Ingestion May be harmful if swallowed.

Information on toxicological effects:

Oral/Parenteral Toxicity Acute, LD50 Rat, 2500 mg/kg

Dermal Toxicity Acute, LD50 Rabbit, 2500 mg/kg

Inhalation Toxicity No information available.

Germ cell mutagenicity The substance was not mutagenic in an Ames test (OECD 471). In a chromosome aberration test in Chinese hamster ovary cells (OECD 473), a structurally related substance did not induce numerical chromosome aberrations (with and without metabolic activation) nor structural aberrations without metabolic activation; equivocal results were obtained regarding induction of structural aberrations after metabolic activation. However, this structurally related substance was not mutagenic either in an in vivo micronucleus test (OECD 474).

Carcinogenicity

OSHA No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity In a one-generation reproduction toxicity study, conducted on a structurally related substance according to OECD guideline No 415, the No Observed Adverse Effect Level (NOAEL) for developmental toxicity was established at 25 mg/kg.

TOST - single exposure No information available.

TOST - repeated exposure No information available.



Safety Data Sheet

Version: 4.0

Revision date: 06/06/2024

Product Name: ZESTOVER

Aspiration hazard

No information available.

Section 12: Ecological Information

Eco toxicity

Toxic to aquatic life with long lasting effects.

Algae (Green algae)

EC50=31 mg/l, 72 hours (based on growth rate - nominal concentration - OECD 201)

Crustacea (Daphnia magna)

EC50=22.4 mg/l, 48 hours (measured concentration - similar to OECD 202)

Fish (Oncorhynchus mykiss)

LC50=7.5 mg/l, 96 hours (measured concentration - OECD 203)

Persistence and degradability

No information available.

Bio accumulative potential

No information available.

Mobility in soil

No information available.

Results of PBT&vPvB assessment

No information available.

Other adverse effects

No information available.

Section 13: Disposal Considerations

Disposal instructions

Do not discharge into drains, water course or onto the ground. Do not allow this material to drain into sewers/ water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/ container in accordance with local/ regional/ national/ international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous water code

No information available.

Waste from residues/unused products

Empty containers or liner may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Section 14: Transport Information

| | ADN | ADR | RID | DOT BULK | DOT NON-BULK | IATA | IMDG |
|-----------------------|--------------------|-----|-----|----------|--------------|------|------|
| UN Number | Not dangerous good | | | | | | |
| Shipping Name | | | | | | | |
| Hazard Class | | | | | | | |
| Packing group | | | | | | | |
| Environmental Hazards | | | | | | | |

Section 15: Regulatory Information

US federal regulations: This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazards Substance List (40 CFR 302.4)

Not listed

OSHA Specifically Regulated Substance (29 CFR 1910.1001-1050)

Not listed



Safety Data Sheet

Version: 4.0

Revision date: 06/06/2024

SARA 302 Extremely hazardous substances

SARA 311/312 Hazard Chemical

SARA 313 (TRI reporting)

Product Name: ZESTOVER

Not listed

Not listed

Not regulated

Other federal regulations

CAA Section 112 Hazardous Air Pollutant List

Not regulated

CAA Section 112 (r) Accidental Release Prevention (40 CFR 68.130)

Not regulated

Safe Drinking Water Act (SDWA)

Not regulated

US State regulations

US. Massachusetts RTK-Substance List

Not listed

US. New Jersey Worker and Community Right-to-Know Act

Not regulated

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed

US. Rhode Island RTK

Not regulated

US. California Proposition 65

Not listed

International Inventories

| Country or region | Inventory name | On inventory (yes/no) |
|--------------------|-----------------------|-----------------------|
| Australia | AICS | Yes |
| Canada | DSL | Yes |
| Canada | NDSL | No |
| China | IECSC | Yes |
| Europe | EINECS | Yes |
| Europe | ELINCS | No |
| Japan | ENCS | Yes |
| Korea | ECL | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | PICCS | Yes |
| US and Puerto Rico | TSCA | Yes |

Section 16: Other Information

Revision Information

Date of this version: June 6, 2024

Declaration to Reader

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the



Safety Data Sheet

Version: 4.0

Revision date: 06/06/2024

Product Name: ZESTOVER

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