

Section 1: Identification of the Substance/Mixture and of the Company

Product identifier

Product Name ZESTOVER
Product Number 772-2012
REACH Registration Number 01-2119982384-28-0000

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 903, The Chinese Bank Building, 61-65 Des Voeux 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

Hazardous to the aquatic environment - chronic toxicity, Category 2, H411

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.

H411 - Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264 - Wash ... thoroughly after handling.

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

P273 - Avoid release to the environment.

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



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Response

P302 + P352 -IF ON SKIN: Wash with plenty of soap and water.
P321 - Specific treatment (see ... on this label).
P332 + P317 - If skin irritation occurs: Get medical help.
P333 + P317 - If skin irritation or rash occurs: Get medical
P362 + P364 - Take off contaminated clothing and wash it before reuse.
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



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

Specific methods

Use water spray to cool unopened containers

General fire hazards

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



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	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
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



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Solubility (ies)

Insoluble in water.

Auto ignition temperature

No information available.

Viscosity

No information available.

Section 10: Stability and Reactivity

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

May cause irritation to the respiratory system.

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

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



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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.
Aspiration hazard	No information available.

Section 12: Ecological Information

Eco toxicity	Toxic to aquatic life with long lasting effects.
Species	Test Results
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				3082			
Shipping Name				ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2, 4-DIMETHYL-3-CYCLOHEXENE-1-CARBOXALDEHYDE)			
Hazard Class				9			
Packing group				III			
Environmental				Yes			



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Hazards	
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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
SARA 302 Extremely hazardous substances	Not listed
SARA 311/312 Hazard Chemical	Not listed
SARA 313 (TRI reporting)	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: Jan.1, 2026

Declaration to Reader

website: www.olaughlinco.com



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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 product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable. O'Laughlin Corporation Limited, shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.