



SAFETY DATA SHEET

According to Regulation (EC) No 453/2010

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SDS-ZC-0001
Version 1.1
Revision Date: 30.06.2022
Printing Date: 30.06.2022

Section 1: IDENTIFICATION OF SUBSTANCE/ MIXTURE AND OF THE COMPANY

1.1 Product identifier

Product name : Zitrus-Clear
Included product code : ZC201-2.5P, ZC201-3.8P ZC201-10P, ZC201-25P

1.2 Relevant identified uses of the substance or mixture

Identified uses : General purposes solvent, Laboratory chemicals,
Manufacture of substances.
Uses advised against : Not applicable.

1.3 Details of the supplier of the safety data sheet

Company : Elite Advanced Materials Sdn Bhd
No 1, Jalan KPK1/2, Kawasan Perindustrian
Kundang, 48020 Rawang, Selangor, Malaysia
E-mail address : enquiry@eamaterials.com

1.4 Emergency telephone number

Emergency : +603-60343766 (Local business hours only)



Section 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flammable liquids	Category 3
Skin Irritation	Category 2
Skin Sensitization	Category 1
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

2.2 Label elements

Labeling in compliance to Regulation (EC) No. 1272/2008 [CLP/GHS]

Hazard pictograms



GHS02



GHS07



GHS09

Signal word

Warning

Hazard statement

H226	Highly 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 statements

P210	Keep away from heat/ sparks/open flames/hot surfaces. – No smoking.
P273	Avoid release to the environment.
P280	Wear protective gloves.

Response

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
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- P303 + P361+ P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P305 + P351+ P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P331 Do NOT induce vomiting.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.
- P362 Take off contaminated clothing and wash before reuse.
- P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage

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

Disposal

P501 Dispose of contents/ container to an approved waste disposal plant

2.3 Other hazards

No data available.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Synonyms : (R)-1-methyl-4-(1-methylenphenyl)-Cyclohexene
 Formula : C₁₀H₁₆
 Molecular Weight : 136.234 g/mol
 CAS-No. : 5989-27-5

Hazardous components according to Regulation (EC) No 1272/2008

Component	Identity	Classification Code	H-Code	Concentration
d-Limonene	CAS-No.: 5989-27-5	Flam. Liq. 3	H225	≤ 100 %
		Skin Irrit. 2	H319	
		Skin Sens. 1	H317	
		Aquatic Acute 1	H400	
		Aquatic Chronic 1	H410	

Section 4: FIRST AID MEASURES

4.1 Description of First Aid measures

General information

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

If inhaled

Move person into fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

In case of skin contact

Take off immediately all contaminated clothing. Wash off with soap and plenty of water for at least 15 minutes. Take victim to a doctor if irritation persists.

In case of eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

If swallowed

Do NOT induce vomiting. Have victim drink water or milk to dilute if victim is conscious. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and delayed symptoms and effects

Allergic reactions, Irritant effects, CNS disorders

4.3 Indication of any immediate medical attention and special treatment

No data available.

Section 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use foam, Carbon dioxide (CO₂), dry powder.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Combustible.

Vapors are heavier than air and may spread along floors. Pay attention to flashback.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapors possible in the event of fire.

Hazardous components according to Regulation (EC) No 1272/2008.

5.3 Advice for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols. Keep away from heat and sources of ignition. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions

Do not discharge into drains or water ways. Prevent further leakage or spillage if safe to do so.



6.3 Methods and material for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
 Observe possible material restrictions (see sections 7 and 10).
 Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area

6.4 Reference to other sections

Information on waste treatment, see Section 13.

Section 7: HANDLING AND STORAGE

7.1 Precaution for safe handling

Personal protective equipment is required during handling to avoid contact with skin and eyes. Please handle the chemical under the fume hood to avoid inhalation of vapour or mist.

Keep container tightly closed and away from sources of heat, sparks and naked flames. Take precautionary measures against static discharges.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Protected from light.

7.3 Specific end use

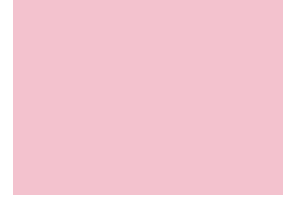
No further relevant information available.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Component	ACGIH TLV (8 hr)	CAL/OSHA PEL (8 hr)	NIOSH REL (Up to 10 hr)
d-limonene	None	None	None

(OSHA)



8.2 Exposure control

Personal protection measures, such as personal protective equipment

Do not eat, drink or smoke during chemical handling. Remove and wash contaminated clothing before re-using. Ventilation must work properly, especially in confined areas. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled.

Eye/ face protection

Chemical goggles or safety glasses is required during handling. A face shield may also be necessary. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear appropriate protective gloves and clothing to prevent skin exposure. 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.

Body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective 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 AXBEK (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).

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	Colorless
Odor	:	Of orange
Odor threshold	:	No data available
pH-value	:	No data available
Melting point/Range	:	-74 °C
Boiling point/Range	:	177 - 178 °C at 1013 hPa
Flash point	:	43 °C
Evaporation rate	:	No data available
Explosion limit-LEL	:	0.7 % (V)
Explosion limit-UEL	:	6.1 % (V)
Vapour pressure	:	2.1 hPa at 20 °C
Vapor density (air=1)	:	No data available
Density	:	0.84 g/cm ³ at 20 °C
Water solubility	:	0.02 g/l at 25 °C
Partition coefficient: n-octanol/water	:	log Pow: 4.23 (calculated) (HSDB) Potential bioaccumulation
Auto-ignition temperature	:	255 °C / 491 °F
Decomposition temperature	:	No data available
Viscosity	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Surface tension	:	No data available

(Merck, 2013, Ver 1.0)

9.2 Other information

Not applicable.

Section 10: STABILITY AND REACTIVITY

10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability

Sensitivity to light. Sensitive to air.

10.3 Possibility of hazardous reactions

Violent reactions possible with: Strong oxidizing agents, acids.

10.4 Conditions to avoid

Heating.

10.5 Incompatible materials

No data available.

10.6 Hazardous decomposition products

No data available.

In the event of fire: see section 5.

Section 11: TOXICOLOGY INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Inhalation, Eye contact, Skin contact

LD50 Oral	> 2000 mg/kg	(Rat)
LD50 Dermal	> 2000 mg/kg	(Rabbit)
Acute Inhalation Toxicity	Possible damages: mucosal irritations	

Skin corrosion/irritation

Skin	- Rabbit
Result	- Irritations
Remarks	- Causes skin irritation.



Serious eye damage/eye irritation

Eye - Rabbit
Result - Irritations
Remarks - Possible damages: Slight irritation

Respiratory or skin sensitisation

Sensitization test - Guinea pig
Result - Positive
Remarks - May cause an allergic skin reaction.

Germ cell mutagenicity

Ames test
Result - Negative

Carcinogenicity

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive toxicity

No data available.

Specific target organ toxicity – single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ toxicity – repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Additional Information

After uptake of large quantities:

Possible damages: CNS disorders

Damage to: Kidney

Handle in accordance with good industrial hygiene and safety practice.



(Merck, 2013, Ver 1.0)

Section 12: ECOLOGY INFORMATION

12.1 Ecotoxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 0.70 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 0.42 mg/l - 48 h

12.2 Persistence and degradability

Biodegradability	Result: 41 - 98 % - 14 d - Readily biodegradable Method: OECD Test Guideline 301C
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12.3 Bioaccumulative potential

Partition coefficient: n-Octanol/water

Log Pow: 4.23

(calculated)

(HSDB) Potential bioaccumulation

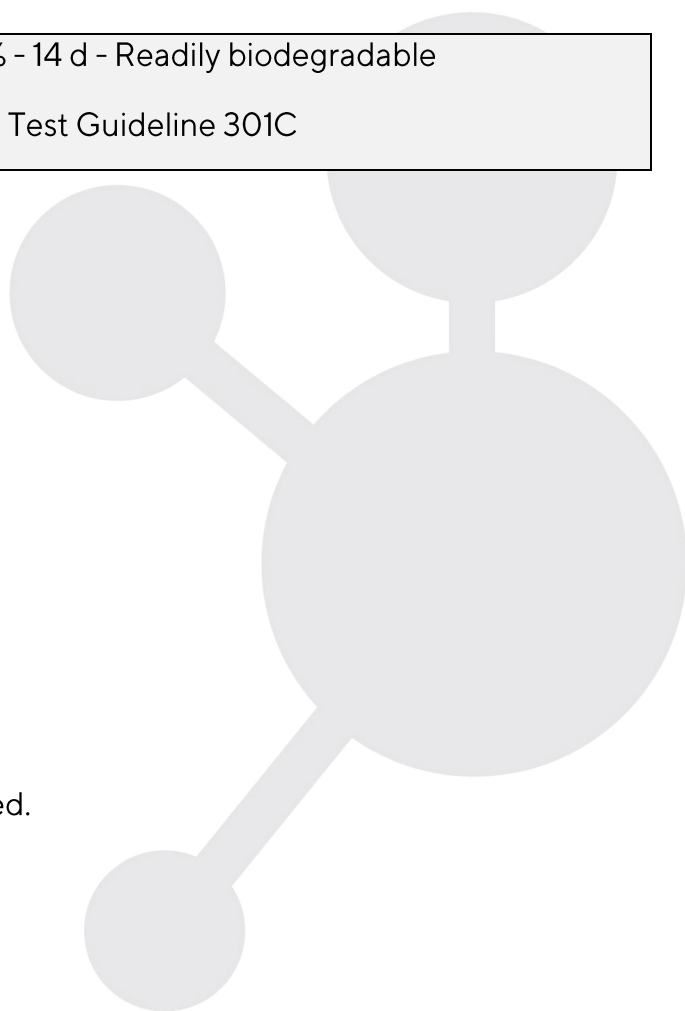
12.4 Mobility in soil

No data available.

12.5 Other adverse effect

Discharge into the environment must be avoided.

(Merck, 2013, Ver 1.0)



Section 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment method

Product

Waste material must be disposed according to national and local regulations. Keep the chemicals in its specific waste container according to the waste classification. According to Quality Environment Regulation (Scheduled Waste) 2005, waste need to be sent to designated premise for recycle, treatment or disposal. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product and do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 2052	IMDG: 2052	IATA-DGR: 2052
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14.2 UN proper shipping name

ADR/RID:	DIPENTENE
IMDG:	DIPENTENE
IATA-DGR:	DIPENTENE

14.3 Transport hazard class (es)

ADR/RID: 3	IMDG: 3	IATA-DGR: 3
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14.4 Packaging group

ADR/RID: III	IMDG: III	IATA-DGR: III
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14.5 Environmental hazards

ADR/RID: no	IMDG: no	IATA-DGR: no
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14.6 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available.

14.7 Special precautions for user

No data available.

Section 15: REGULATORY INFORMATION

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

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

Section 16: OTHER INFORMATION

This information is based on present level of our knowledge, however, this shall not constitute a guarantee product features and shall not establish a legally valid contractual relationship.

Abbreviations:

ADR : European agreement concerning the international carriage of dangerous goods by road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association

ICAO : International Civil Aviation Organization

RID : Regulations concerning the International Carriage of Dangerous goods by rail.

Notice to reader

The information contained in this Safety Data Sheet is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of the products and should not be construed as any guarantee of technical performance or suitability for particular application.

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