



## GHS Safety Data Sheet – UN GHS

According to Regulation ST/SG/AC.10/30/Rev.7 UN GHS

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This Safety Data Sheet cancels and replaces all preceding SDS for this Product

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

#### 1.1 Product identifier – Mandarin Zest

References: Prolitec 9012

Firmenich 480376KW

#### 1.2 Relevant identified uses of the substance and uses advised against

The Relevant Identified Use is air treatment using the Prolitec diffusion system to convert the Product from liquid to vapor state. The liquid product in the Prolitec diffusion system is contained in sealed, tamper-proof polypropylene cartridges and handled only by a qualified Prolitec field service technician. Use of the Product for any purpose other than the “Relevant Identified Use” is strictly prohibited. Safety Information for the Relevant Identified Use is contained in the Prolitec User Guide and in Sections 8 and 16 of this Safety Data Sheet.

WITH THE EXEPTION OF SECTIONS 8 AND 16, THIS SAFETY DATA SHEET IS INTENDED TO PROVIDE SAFETY INFORMATION FOR EMPLOYEES AND EMERGENCY PERSONNEL WHO MAY EXPERIENCE DIRECT CONTACT AND/OR SUSTAINED EXPOSURE TO THE PRODUCT IN LIQUID STATE SUCH AS MIGHT OCCUR IN AN ACCIDENTAL SPILL.

SECTIONS 2-7 ND 9-15 ARE NOT APPLICABLE TO THE USE OF THIS PRODUCT FOR THE “RELEVANT IDENTIFIED USE.”

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

##### **Prolitec Inc.**

1235 W. Canal Street  
Milwaukee, WI 53233 USA  
Tel: +1 414 615 4600  
Email: [sds@prolitec.com](mailto:sds@prolitec.com)

##### **Singapore Contact**

Rentokil Initial (S) Pte Ltd  
30, Tuas West Road  
Singapore 638386  
T: +65 6347 8116

#### 1.4 Emergency telephone number

For chemical emergency (spill, leak, exposure or incident)  
Call INFOTRAC: +1-800-535-5053 (inside USA) or +1-352-323-3500 (outside USA).

## SECTION 2 HAZARDS IDENTIFICATION – Exposure to the Product in Liquid State

Applicable only to exposure to the concentrated liquid such as may occur in an accidental spill. Safety information for the Relevant Identified Use as defined in Section 1.2 above is contained in Sections 8 and 16.

### 2.1 Classification of the substance or mixture

#### 2.1.1 Classification according to Regulation ST/SG/AC.10/30/Rev.7 [UN/GHS]

Flammable Liquid - Cat. 4	H227
Aspiration Hazard - Cat. 1	H304
Skin Irritation - Cat. 2	H315
Skin Sensitization - Cat. 1	H317
Eye Irritation - Cat. 2A	H319
Environmental Hazard (acute) - Cat. 2	H401
Environmental Hazard (chronic) - Cat. 2	H411

#### 2.1.2 Additional information

Full text of listed statements: See Section 15

### 2.2 Label elements

#### Hazard pictograms:



#### Signal word:

Danger

#### Hazard statements:

H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H227	Combustible liquid.
H411	Toxic to aquatic life with long lasting effects.

#### Precautionary statements:

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403+P235	Store in a well-ventilated place. Keep cool.

### 2.3 Other hazards

No data available at this time.

## SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

The exact percentage (concentration) of composition has been withheld as a trade secret.

### 3.2 Mixtures

Classifications are for direct contact or sustained exposure to the liquid state of the Product and are not applicable to the Relevant Identified Use of the Product.

Contains :

$\geq 10.0 < 15.0\%$

Limonene

N° CAS : 0000138-86-3

N° EINECS: 227-813-5

N° REACH: 01-2119529223-47

GHS Classification:

Aspiration Hazard - Cat. 1 [H304]

Skin Sensitization - Cat. 1B [H317]

Skin Irritation - Cat. 2 [H315]

Environmental Hazard (acute) - Cat. 1 [H400]

Environmental Hazard (chronic) - Cat. 1 [H410]

Flammable Liquid - Cat. 3 [H226]

$\geq 7.5 < 10.0\%$

Cyclopentaneacetic Acid, 3-Oxo-2-Pentyl-, Methyl Ester

N° CAS : 0024851-98-7

N° EINECS: 246-495-9

N° REACH: 01-2119493355-31

Environmental Hazard (acute) - Cat. 3

[Environmental Hazard (acute) - Cat. 3 [H402]H402]

$\geq 2.5 < 5.0\%$

Linalool

N° CAS : 0000078-70-6

N° EINECS: 201-134-4

N° REACH: 01-2119474016-42

Skin Sensitization - Cat. 1B [H317]

Skin Irritation - Cat. 2 [H315]

Eye Irritation - Cat.2A [H319]

Environmental Hazard (acute) - Cat. 3 [H402]

Acute Toxicity (oral) - Cat. 5 [H303]

Flammable Liquid - Cat. 4 [H227]

$\geq 1.0 < 2.5\%$

4-Cyclohexyl-2-Methyl-2-Butanol

N° CAS : 0083926-73-2

N° ELINCS: 420-630-3

N° REACH: 01-0000016725-66

Eye Damage - Cat.1 [H318]

Skin Irritation - Cat. 3 [H316]

Environmental Hazard (chronic) - Cat. 2 [H411]

Environmental Hazard (acute) - Cat. 2 [H401]

$\geq 1.0 < 2.5\%$

7-Octen-2-Ol, 2,6-Dimethyl-

N° CAS : 0018479-58-8

N° EINECS: 242-362-4

N° REACH: 01-2119457274-37

Skin Irritation - Cat. 2 [H315]

Eye Irritation - Cat.2A [H319]

Environmental Hazard (acute) - Cat. 3 [H402]

Acute Toxicity (oral) - Cat. 5 [H303]

Flammable Liquid - Cat. 4 [H227]

$\geq 0.1 < 0.5\%$

Oxacyclohexadec-12-En-2-One, (12e)-

N° CAS : 0111879-80-2

N° ELINCS: 422-320-3

N° REACH: 01-0000016883-62

Environmental Hazard (acute) - Cat. 1 [H400]

Environmental Hazard (chronic) - Cat. 1 [H410]

$\geq 0.1 < 0.5\%$

6-Octen-1-Ol, 3,7-Dimethyl-

N° CAS : 0000106-22-9

N° EINECS: 203-375-0

N° REACH: 01-2119453995-23

Skin Sensitization - Cat. 1B [H317]

Skin Irritation - Cat. 2 [H315]

Eye Irritation - Cat.2A [H319]

Environmental Hazard (acute) - Cat. 2 [H401]

Acute Toxicity (oral) - Cat. 5 [H303]

Acute Toxicity (dermal) - Cat. 5 [H313]

<p>&gt;= 0.1 &lt; 0.5%</p> <p>3-Cyclohexene-1-Carboxaldehyde, 2,4-Dimethyl-</p> <p>N° CAS : 0068039-49-6</p> <p>N° ELINCS: --</p> <p>N° REACH: 01-2119982384-28</p>	<p>Skin Sensitization - Cat. 1B [H317]</p> <p>Skin Irritation - Cat. 2 [H315]</p> <p>Environmental Hazard (chronic) - Cat. 2 [H411]</p> <p>Environmental Hazard (acute) - Cat. 2 [H401]</p> <p>Acute Toxicity (oral) - Cat. 5 [H303]</p> <p>Flammable Liquid - Cat. 4 [H227]</p>
<p>&gt;= 0.1 &lt; 0.5%</p> <p>1,3-Benzodioxole-5-Propanal, .Alpha.-Methyl-</p> <p>N° CAS : 0001205-17-0</p> <p>N° EINECS: 214-881-6</p> <p>N° REACH: 01-2120740119-58</p>	<p>Reproductive Toxicity - Cat. 2 [H361]</p> <p>Skin Sensitization - Cat. 1B [H317]</p> <p>Environmental Hazard (chronic) - Cat. 2 [H411]</p> <p>Environmental Hazard (acute) - Cat. 2 [H401]</p> <p>Acute Toxicity (oral) - Cat. 5 [H303]</p>
<p>&gt;= 0.1 &lt; 0.5%</p> <p>Heptanoic Acid, 2-Propenyl Ester</p> <p>N° CAS : 0000142-19-8</p> <p>N° EINECS: 205-527-1</p> <p>N° REACH: 01-2119488961-23</p>	<p>Acute Toxicity (oral) - Cat. 3 [H301]</p> <p>Acute Toxicity (dermal) - Cat. 3 [H311]</p> <p>Environmental Hazard (acute) - Cat. 1 [H400]</p> <p>Environmental Hazard (chronic) - Cat. 3 [H412]</p> <p>Flammable Liquid - Cat. 4 [H227]</p>
<p>&gt;= 0.1 &lt; 0.5%</p> <p>1,6-Octadiene, 7-Methyl-3-Methylene-</p> <p>N° CAS : 0000123-35-3</p> <p>N° EINECS: 204-622-5</p>	<p>Aspiration Hazard - Cat. 1 [H304]</p> <p>Skin Irritation - Cat. 2 [H315]</p> <p>Eye Irritation - Cat.2A [H319]</p> <p>Environmental Hazard (acute) - Cat. 1 [H400]</p> <p>Environmental Hazard (chronic) - Cat. 2 [H411]</p> <p>Flammable Liquid - Cat. 3 [H226]</p>
<p>&gt;= 0.1 &lt; 0.5%</p> <p>2,6-Octadien-1-Ol, 3,7-Dimethyl-, (E)-</p> <p>N° CAS : 0000106-24-1</p> <p>N° EINECS: 203-377-1</p>	<p>Eye Damage - Cat.1 [H318]</p> <p>Skin Sensitization - Cat. 1B [H317]</p> <p>Skin Irritation - Cat. 2 [H315]</p> <p>Environmental Hazard (acute) - Cat. 3 [H402]</p> <p>Acute Toxicity (oral) - Cat. 5 [H303]</p>
<p>&gt;= 0.1 &lt; 0.5%</p> <p>Benzene, 1-Methyl-4-(1-Methylethyl)-</p> <p>N° CAS : 0000099-87-6</p> <p>N° EINECS: 202-796-7</p>	<p>Reproductive Toxicity - Cat. 2 [H361]</p> <p>Aspiration Hazard - Cat. 1 [H304]</p> <p>Skin Irritation - Cat. 3 [H316]</p> <p>Environmental Hazard (chronic) - Cat. 2 [H411]</p> <p>Environmental Hazard (acute) - Cat. 2 [H401]</p> <p>Acute Toxicity (oral) - Cat. 5 [H303]</p> <p>Flammable Liquid - Cat. 3 [H226]</p>
<p>&gt;= 0.1 &lt; 0.5%</p> <p>2-Dodecenal, (E)-</p> <p>N° CAS : 0020407-84-5</p> <p>N° EINECS: 243-797-2</p> <p>N° REACH: 01-2120111676-59</p>	<p>Skin Sensitization - Cat. 1B [H317]</p> <p>Skin Irritation - Cat. 2 [H315]</p> <p>Eye Irritation - Cat.2A [H319]</p> <p>Environmental Hazard (acute) - Cat. 1 [H400]</p> <p>Acute Toxicity (dermal) - Cat. 5 [H313]</p>

0 < 0.1%  
2-Buten-1-One, 1-(2,6,6-Trimethyl-1,3-  
Cyclohexadien-1-Yl)-  
N° CAS : 0023696-85-7  
N° EINECS: 245-844-2  
N° REACH: 01-2120105798-49

Skin Sensitization - Cat. 1A [H317]  
Skin Irritation - Cat. 2 [H315]  
Environmental Hazard (chronic) - Cat. 2 [H411]  
Environmental Hazard (acute) - Cat. 2 [H401]  
Acute Toxicity (dermal) - Cat. 5 [H313]

## **SECTION 4 FIRST AID MEASURES– for Direct Contact with the Pure Liquid**

### **4.1 Description of first aid measures**

As in all cases of potential poisoning, obtain medical advice immediately.

#### In the case of eye contact:

Irrigate copiously with water for at least 10 minutes. Obtain medical advice if any irritation persists.

#### In the case of inhalation:

In case of situations other than the Relevant Identified Use: Remove the affected individual to fresh air environment. Obtain medical advice immediately if irritation persists.

#### In the case of skin contact:

Remove contaminated clothes. Wash skin with large volumes of water (or soap and water). If irritation persists, or any sign of tissue damage is apparent, obtain medical advice immediately.

#### In the case of ingestion:

In the event of accidental ingestion, rinse mouth with water. Give up to 1 tumbler (half pint) of milk. Do not induce vomiting. Obtain medical advice immediately.

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

No information available on the product

### **4.3 Indication of immediate medical attention and special treatment needed**

None known.

## **SECTION 5 FIRE FIGHTING MEASURES**

### **5.1 Suitable extinguishing media**

Use adequate extinguishers with foam, carbon dioxide or dry chemical.

### **5.2 Unsuitable extinguishing media**

Do not use a high pressure water stream.

### **5.3 Special hazards arising from the substance or mixture**

None known.

### **5.4 Advice for firefighters**

Do not use a high pressure water stream. In case of insufficient ventilation, wear suitable respiratory equipment.

## **SECTION 6 ACCIDENTAL RELEASE MEASURES**

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

#### 6.1.1 For Non-emergency personnel:

Use protective gloves when handling a spillage. Do not smoke. Avoid naked flames or other potential sources of ignition such as electrical equipment. Avoid contact with skin or eyes and inhalation of vapor. Use normal washing routines. Ensure adequate ventilation in working areas following a spill. Follow First Aid Measures in 4 above.

#### 6.1.2 For emergency responders:

Follow the recommendation in 6.1

### 6.2 Environmental Precautions

Do not discharge into drains, soil or the aquatic environment.

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

#### 6.3.1 For containment:

Small spills can be wiped up with a cloth or paper. For larger spills, use standard absorbents such as saw dust, sand or vermiculite.

#### 6.3.2 For cleaning up:

Use cloth or paper for spills from the smaller cartridges. If a larger cartridge is spilled use an absorbent such as saw dust, vermiculite or sand. Dispose of clean up materials in accordance with government regulations.

### 6.4 References to other sections

Please see also sections 4, 5, 7 and 16 for further information.

## SECTION 7 HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes.  
No smoking; avoid sources of ignition.  
Avoid exposing to high temperature during processing  
Do not ingest or apply to skin.  
Follow good personal washing routines.  
Always reseal any cartridge removed from an appliance.  
Keep cartridges in an upright position after unsealing.  
Where the product is handled, maintain adequate ventilation.  
Wear adequate protective gloves and eye protection.

#### 7.1.1 Protective measures

Keep strict control of dust accumulation. Maintain adequate ventilation, avoid naked flames and other sources of ignition.

#### 7.1.2 Advice on general occupational hygiene

Use good washing routines.

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

Store in cartridges positioned upright in a master carton in a place without exposure to sunlight at room temperature.

### 7.3 Specific end uses

Environmental fragrance. See Relevant Identified Use.

## SECTION 8 EXPOSURE CONTROLS

### 8.1 Control parameters:

Maximum airborne concentration limits for 8 hours continuous inhalation, 5 days a week for natural lifetime.

Contains no substances with occupational exposure limit values.

#### Derived No Effect Level (DNEL)

No Data Available

#### Predicted No Effect Concentration (PNEC)

No Data Available

Also see Section 16.3

### 8.2 Exposure controls

Avoid exposing to high temperatures; maintain adequate ventilation.

#### 8.2.1 Appropriate engineering controls

Maintain adequate ventilation where product is handled.  
In the Relevant Identified Use – use only as directed.

#### 8.2.2 Environmental exposure controls

In the Relevant Identified Use, use as directed.  
In handling of the liquid, minimize release into the environment.

#### 8.2.3 Personal Protection

In the Relevant Identified Use and in handling the cartridges, personal protective wear is not required. In the bulk handling of the liquid or in accidental spill clean-up, protective gloves and safety glasses are required.

Hand protection: Adequate Protective Gloves should be worn.

Eye protection: Adequate safety glasses should be used.

Skin protection: Wear protective clothing, overall if necessary to limit the odour contamination of personal clothing. Individual washing routines should be followed after any potential contact.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

(a) Appearance :	LIQUID
(b) Color :	Pale Yellow to Yellow
(c) Odor :	Strong perfume
(d) pH :	Not Available
(e) Melting Point/Freezing Point range °C :	Not Available
(f) Initial Boiling Point/range °C :	Not Available
(g) Flash Point :	78°C / 172.4°F
(h) Evaporation Rate:	Not Available

(i) Flammability (solid/gas) :	Not Available
(j) Explosive properties (ST class) :	Not Available
(k) Vapor Pressure (Pa) :	0.1 mm Hg @ 20°C
(l) Vapor Density :	Not Applicable
(m) Relative Density :	0.869
(n) Water Solubility :	Not Applicable
(o) Partition coefficient (n-octanol/water) :	Not Applicable
(p) Auto Ignition Temperature :	Not Available
(q) Decomposition Temperature :	Not Available
(r) Viscosity :	Not Available
(s) Explosive Properties :	Not Available
(t) Oxidizing Properties :	Not an oxidizing agent

## 9.2 Other information

None

## SECTION 10 STABILITY AND REACTIVITY

### 10.1 Reactivity

No known reaction with water.

### 10.2 Chemical stability

Presents no significant reactivity hazard. Normally stable even at elevated temperatures and pressures. Does not undergo explosive decomposition. It is not pyrophoric or an oxygen donor. Does not combine with other organic materials to form explosive mixtures. Will not undergo hazardous exothermic polymerization.

### 10.3 Possibility of hazardous reactions

Not known.

### 10.4 Conditions to avoid

Avoid contact with oxidizing agents.  
Avoid temperatures above or at least 5 °C below flash point.  
Do not heat cartridge or closed containers.

### 10.5 Incompatible materials

Avoid oxidizing agents.

### 10.6 Hazardous decomposition products

Contact with water or storage under recommended conditions for one year should not produce dangerous decomposition products.

## SECTION 11 TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

This mixture has not been subjected to toxicological testing as an entity. According to available data on the constituents, the health classification criteria are met.



- (a) acute toxicity  
Calculated LD50 Oral: LD50 > 2000 mg/kg bw
- (b) skin corrosion/irritation  
Skin Irritation - Cat. 2
- (c) serious eye damage/irritation  
Eye Irritation - Cat. 2A
- (d) respiratory or skin sensitisation  
Skin Sensitization - Cat. 1
- (e) germ cell mutagenicity  
Not applicable
- (f) carcinogenicity  
Not applicable
- (g) reproductive toxicity  
Not applicable
- (h) STOT-single exposure  
Not applicable
- (i) STOT-repeated exposure  
Not applicable
- (j) aspiration hazard  
Aspiration Hazard - Cat. 1

## **SECTION 12 ECOLOGICAL INFORMATION**

This mixture has not been subjected to eco-toxicological testing as an entity. According to available data on the constituents, the environmental classification criteria are met.

### **12.1 Toxicity**

Environmental Hazard (acute) - Cat. 2  
Environmental Hazard (chronic) - Cat. 2

### **12.2 Persistence and biodegradability**

No data available.

### **12.3 Bioaccumulative potential**

No data available.

### **12.4 Mobility in soil**

No data available.

### **12.5 Results of PBT and vPvB assessment**

Not applicable.

## 12.6 Other adverse effects

No data available.

## SECTION 13 DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Best means of disposal of any product is through its proper use according to instructions. Disposal must be in accordance with local, state and national requirements.

This product is dangerous for the environment. Do not discharge to sewers, drains or water courses. This product must be disposed of as hazardous waste. The empty container may be disposed of as controlled waste in accordance with appropriate regulations. The containers are recyclable in some countries equipped to recycle Polypropylene.

## SECTION 14 TRANSPORT INFORMATION

In case of accidental spillage or fire during transport, refer to instructions given under points 5, 6, 7 and 8 above.

<b>14.1 UN number:</b>	3082 IMDG Not regulated per 2.10.2.7 IATA Not regulated per Special Provision 197
<b>14.2 Proper Shipping Name:</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LIMONENE)
<b>14.3 Class:</b>	9 (not regulated – limited qty exemption)
<b>14.4 Packing Group:</b>	III (not regulated – limited qty exemption)
<b>14.5 Environmental hazard:</b>	Yes
Marine Pollutant:	Yes
Sea Segregation group:	Not applicable.
<b>14.6 Special Precautions for user:</b>	Refer to section 7.
<b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:</b>	Not applicable.

**Limited Quantity Exemptions** This product is classified as a Marine Pollutant (Environmentally Hazardous Substance) in accordance with the IMDG Code and the UN Model Regulations. The individual inner packages do not exceed 5 liters and the master or outer carton does not exceed 30 kilograms (IMDG Code 2.10.2.7; ICAO Special Instruction A197, 49CFR 171.4(c)(2)) so is shipped unregulated. Shipment may be regulated if contents are removed from inner packaging and combined into containers exceeding 5 L or 5 kg. Transport is pursuant to IATA and IMO Limited Quantity exemptions.



### Note for transport

Local, state or national requirements may apply to the carriage of this product.

## SECTION 15 REGULATORY INFORMATION

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

No relevant information available at this time.

### 15.2 Chemical safety assessment

No data available at this time.

### 15.3 Full text of phrases used under section 2

H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H227	Flammable liquid.
H411	Toxic to aquatic life with long lasting effects.
P210	Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves and eye protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P370+P378	In case of fire: Use appropriate fire extinguishers for fire control.
P391	Collect spillage.
P331	Do NOT induce vomiting.
P363	Wash contaminated clothing before reuse.
P403+P235	Store in a well-ventilated place. Keep cool.
P337	If eye irritation persists: Get medical advice/attention.

### 15.4 Full text of phrases used under section 3

H226	Flammable liquid and vapour.
H227	Flammable liquid.
H301	Toxic if swallowed.
H303	May be harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H313	May be harmful in contact with skin.
H315	Causes skin irritation.
H316	Causes mild skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H361	Suspected of damaging fertility or the unborn child.
H400	Very toxic to aquatic life.

H401	Toxic to aquatic life
H402	Harmful to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

## SECTION 16 OTHER SAFETY INFORMATION

### 16.1 Revisions

June-2020: Version 3.0 – Updates to sections 1, 2, 3, 8, 9, 11, 12, 14, 15, 16

### 16.2 Key literature references and sources of data

#### **Research Institute for Fragrance Materials (RIFM)**

**OECD SIDS Organization for Economic Cooperation and Development (OECD)**,  
United States Environmental Protection Agency. Voluntary Testing Program for High Volume Chemicals

#### **COUNCIL DIRECTIVE 98/24/EC of 7 April 1998**

The protection of the health and safety of workers from the risks related to chemical agents at work (fourteenth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC)

#### **EUROPEAN COMMISSION, Recommendation from the Scientific Committee for Occupational Exposure Limits, February, 2013 (SCOEL)**

#### **EU IUCLID International Uniform Chemical Information Data Base**

European Chemicals Agency European Commission Council Directive 98/24/EC – the first and the second lists of IOELs and amending Directives 91/322/EEC and 2000/39/EC. (98/24/EC)

#### **American Congress of Governmental and Industrial Hygienist (“ACGIH”)**

Threshold Limited Values (TLV) and Biological Exposure Indices (BEI) including TLV – TWA (time-weighted average; TLV–STEL (short term exposure limit); and TLV-C (ceiling). (ACGIH)

#### **Institut National de Recherche et de Sécurité (INRS)**

*Valeurs limites d'exposition professionnelle (Occupational Exposure Limits or OELs) aux agents chimiques en France*, Aide-mémoire technique ED 984. Comité Scientifique pour la Surveillance des Atmosphères de Travail (Scientific Committee for Surveillance of the Workplace), working under the High Council for the Prevention of Occupational Hazards Environment.

#### **U.S. Department of Labor, Occupational Safety and Health Administration (OSHA)**

29 CFR 1910.1200 Subpart Z, Table Z-1 TLV-TWA maximum continuous exposure limits.

#### **US State of California, Environmental Protection Agency**

Office of Health Hazard Assessment (OEHHA), Safe Drinking Water and Toxic Enforcement Act of 1986. Maximum continuous exposure TLV-TWA Limits.

#### **German Federal Ministry of Labor and Social Affairs (BMAS)**

TRGS 900 Arbeitsplatzgrenzwert (Occupational Exposure Limits) Ausschuss für Gefahrstoffe - AGS-Geschäftsführung - BAuA

**Decreto Legislativo del Governo n.277, 15/08/1991 Decreto Legislativo n.66, 25/02/2000, Decreto Ministeriale 26/02/2004** <http://www.ambiente.it/sicurezza/legislazione/leggi/2004/dm26-2-2004.htm>

**Bundesanstalt für Arbeitsschutz und Arbeitsmedizin**; Federal Institute for Occupational Safety and Health, Dortmund, Germany

**Instituto Nacional de Seguridad e Higiene en el Trabajo (INSHT)**, Spain  
Límites de exposición profesional para agentes químicos en España.

**Safework Australia** <http://hsis.safeworkaustralia.gov.au/HazardousSubstance> and Guidance on the Interpretation of Workplace Exposure Standards for Airborne Contaminants published by Safework 10 May 2013.

### 16.3 Workplace safety information for Relevant Identified Use

The Occupational Safety and Health Administration (OSHA), ACGIH, the EU, EU member states, and other national organizations including those listed in 16.2 above have established an occupational exposure limit (OELs or Limit) for concentrations of potentially hazardous ingredients (PHI) in workplace air. The Limit value is the time-weighted average (TWA) of the concentration the PHI in the air within the breathing zone of a worker over a specified reference period, which is usually 40 hours per week over 40 years. The Limit for PHIs, depending on their source, are also referred to as the Indicated Occupational Exposure Limit (IOEL) or Threshold Limit Value (TLV-TWA).

16.3.1 The Product contains some ingredients which are potentially hazardous (PHI) which are subject to the Limit. The names of these PHIs and the Limit is in Section 8.1 above.)

#### 16.3.2 Workplace Safety Evaluation

The Relevant Identified Use of the Product the potentially hazardous ingredients been evaluated for compliance with the Limit considering: (A) the average airborne concentration (reported as parts per million PPM) of the vapor-state of the Product when the odor or scent effect is assessed by humans as “Intolerable;” (B) the percentage volume by weight of the PHI as a proportion of the Product ; (C) the maximum average potential airborne concentration of the substance; and (D) the lowest of the Limits established by the sources listed in 16.2. The safety evaluation formula is  $A \text{ (ppm)} \times B \text{ (\%)} = C$ , which is then compared to the Limits with a resulting margin of safety (MoS) or headroom of at least 50.

#### 16.3.3 Workplace Safety Determination

In the Relevant Identified Use of the Product, the PHIs (potentially hazardous ingredients) do not exceed the Limits established by the organizations listed in 16.2 as determined by the method set forth in 16.3

#### 16.3.4 Ozone

The Formulation contains no ozone and the Relevant Identified Use does not generate ozone. The Formulation contains no toxic chemical or chemicals subject to reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986.

#### 16.3.5 Fire and Explosion Information

Used as directed in the Relevant Identified Use, there is no material risk of ignition resulting in fire or explosion.

#### 16.3.6 IFRA Analysis and Safety Determination for Skin Contact

<u>FRAGRANCE</u>	<u>IFRA CLASS</u>	<u>IFRA ANALYSIS</u>
Mandarin Zest	12	Not restricted

IFRA Class 12 includes:

- Air Fresheners and Fragrancing of all types (plug-ins, solid substrate, membrane delivery, ambient, electrical) excluding aerosol products.

- Scent delivery system using a dry air technology that releases a fragrance without sprays, aerosols or heated oils (technology of nebulization).

Based on safety data generated by the Research Institute for Fragrance Materials (“RIFM” [www.RIFM.org](http://www.RIFM.org)), its vendors and the open scientific literature. This data is evaluated in accordance with the principles laid down in Annex 1 to the International Fragrance Association (“IFRA” [www.ifraorg.org](http://www.ifraorg.org)) Code of Practice. Annex 1 requires consideration of possible effects in the skin, including skin irritation and sensitization with special attention paid to the effect of sunlight, should ingredients absorb ultra-violet radiation. Systemic toxicity should be considered in relation to the quantities used and likelihood of entering the body. Also considered is a history of safe-use of the ingredients at the concentration levels which may occur in the event of accidental release taking into account any reports of adverse effects reported by dermatologists or other medical professionals.

We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Prolitec, it is the user's obligation to determine conditions of safe use of the product.

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