

Firmenich

GHS Safety Data Sheet

According to Regulation ST/SG/AC.10/30/Rev.8 UN GHS

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

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

941962
EXALTOLIDE®
© Firmenich product

CAS No: 106-02-5
EC No: 203-354-6
EU REACH No: 01-2119987323-31

1.2 Relevant identified uses of the substance or mixture and uses advised against

Ingredient for use in products that may be ingested and/or fragrance ingredient for use in consumer product.
Not for personal use in this form or concentration.
Intended to be used in the manufacture of products for consumers

1.3 Details of the supplier of the safety data sheet

Firmenich Asia Private Ltd
No 10 Tuas West Road
Singapore 638377
SINGAPORE
Tel: +(65) 6347 2888

GRS.Flavour.FIRSIN@firmenich.com

1.4 Emergency telephone number

+65 3158 1074 NCEC - Available 24/7

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation ST/SG/AC.10/30/Rev.8 [UN/GHS]

Skin Irritation - Cat. 3	H316
Skin Sensitization - Cat. 1B	H317
Environmental Hazard (acute) - Cat. 3	H402
Environmental Hazard (chronic) - Cat. 2	H411

2.1.2 Additional information

Full text of listed statements : See section 16

2.2 Label elements

Firmenich

GHS Safety Data Sheet

According to Regulation ST/SG/AC.10/30/Rev.8 UN GHS

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

Hazard pictograms:



Signal Word:

Warning

Hazard Statements:

H317	May cause an allergic skin reaction.
H316	Causes mild skin irritation.
H402	Harmful to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements:

P261	Avoid breathing dust.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.

2.3 Other hazards

No data available at this time.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical substance.

Contains :

>= 99.0 <= 100.0%
Oxacyclohexadecan-2-One
N° CAS : 0000106-02-5
N° EINECS: 203-354-6
N° EU REACH: 01-2119987323-31

GHS Classification:

Skin Sensitization - Cat. 1B [H317]
Skin Irritation - Cat. 3 [H316]
Environmental Hazard (chronic) - Cat. 2 [H411]

Firmenich

GHS Safety Data Sheet

According to Regulation ST/SG/AC.10/30/Rev.8 UN GHS

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

$\geq 0.5 < 1.0\%$

Reaction Mass Of: (E)-Oxacyclohexadec-12-En-2-One, (E)-Oxacyclohexadec-13-En-2-One, A) (Z)-Oxacyclohexadec-(12)-En-2-One And B) (Z)-Oxacyclohexadec-(13)-En-2-One
N° CAS : 0034902-57-3
N° ELINCS: 422-320-3

Environmental Hazard (acute) - Cat. 1 [H400]
Environmental Hazard (chronic) - Cat. 1 [H410]

4 FIRST-AID MEASURES

4.1 Description of first aid measures

General information:

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

In case of eye contact:

Irrigate copiously with water for at least 10 minutes. Obtain medical advice if any irritation or evidence of tissue damage persists.

In case of inhalation:

Remove the individual to fresh air and keep at rest. Obtain medical advice immediately.

In case of skin contact:

Remove contaminated clothes. Wash skin with large volumes of water.

If irritation persists, or any sign of tissue damage is apparent, obtain medical advice immediately.

In case of ingestion:

Rinse mouth with water. Obtain medical advice immediately.

4.2 Most important symptoms and effects, both acute and delayed

No specific data available.

4.3 Indication of immediate medical attention and special treatment needed

No specific data available.

5 FIRE-FIGHTING MEASURES

5.1 Extinguishing media

In the event of fire, adequate extinguishers should be used. Avoid inhalation of smoke and fumes. In case of insufficient ventilation, wear suitable respiratory equipment.

5.2 Special hazard arising from the substance or mixture

No specific hazard known.

5.3 Advice for fire-fighters

No specific advice.

6 ACCIDENTAL RELEASE MEASURES

Firmenich

GHS Safety Data Sheet

According to Regulation ST/SG/AC.10/30/Rev.8 UN GHS

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

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

Adequate protective gloves should be worn when handling spillages. No smoking. Avoid naked flames or other potential sources of ignition (eg. electrical equipment).

Avoid skin contamination and inhalation of dust.

Individual washing routines should be followed after any potential contact.

Ensure adequate ventilation in working areas following accidental releases.

For emergency personnel:

Apply the same recommendations as section 6.1

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

For containment:

For cleaning-up:

Spillages should be disposed of in accordance with Governmental Regulations.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Keep strict control of dust accumulation to a minimum.

Avoid contact with skin and eyes.

Wear adequate protective gloves protection and eye/face protection.

No smoking. Avoid any source of ignition. Use flameproof electrical equipment and spark-reduced tools.

Ensure that all equipments are properly bonding and earthing.

Avoid exposing to high temperature during processing.

Do not ingest or apply to the skin as such. Good personal washing routines should be followed.

Maintain adequate local and general ventilation where product is handled.

7.1.1 Protective measures

Keep strict control of dust accumulation to a minimum. Maintain adequate local and general ventilation where product is handled. Avoid any sources of ignition.

7.1.2 Advice on general occupational hygiene

Good personal washing routines should be followed.

7.2 Conditions for safe storage, including any incompatibilities

It is good general practice to store in closed, preferably full, containers away from heat sources, and protected from extremes of temperature. Do not re-use the empty container.

Respect general rules for compatibility storage.

7.3 Specific end use(s)

Not available at this time.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Firmenich

GHS Safety Data Sheet

According to Regulation ST/SG/AC.10/30/Rev.8 UN GHS

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

8.1 Control parameters

Contains no substances with occupational exposure limit values

Derived No Effect Level (DNEL)

Hazard conclusion Worker (dermal), systemic effects - long-term, No hazard identified.

Hazard conclusion Worker (dermal), local effects - long-term, Medium hazard (no threshold derived) (skin sensitisation)

Hazard conclusion Worker (inhalation), No hazard identified.

Hazard conclusion Consumer (oral), No hazard identified.

Hazard conclusion Consumer (inhalation), No hazard identified.

Hazard conclusion Consumer (dermal), systemic effects - long-term, No hazard identified.

Hazard conclusion Consumer (dermal), local effects - long-term, Medium hazard (no threshold derived) (skin sensitisation)

Predicted No Effect Concentration (PNEC)

PNEC Aqua (freshwater) = 2.7 µg/l

PNEC Aqua (marine water) = 0.27 µg/l

PNEC Water (intermittent release) No hazard identified.

PNEC Sediment (freshwater) = 21 mg/kg sediment dw

PNEC Sediment (marine water) = 4.2 mg/kg sediment dw

PNEC STP = 10 mg/l

PNEC Soil = 5.44 mg/kg soil dw

PNEC Air No hazard identified.

PNEC Oral (secondary poisoning) No hazard identified.

8.2 Exposure controls

Avoid exposing to high temperature during processing.

Maintain adequate local and general ventilation where product is handled.

8.2.1 Appropriate engineering controls

Maintain adequate local and general ventilation where product is handled and dispensed.

8.2.2 Environmental exposure controls

Not available at this time. Minimize release to the environment.

8.3 Personal protection

Respiratory protection: Where ventilation (LEV) is inadequate to prevent any inhalation of substances, use adequate respiratory apparatus.

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.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Firmenich

GHS Safety Data Sheet

According to Regulation ST/SG/AC.10/30/Rev.8 UN GHS

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

Appearance :	SOLID
Colour :	WHITE
Odour :	Characteristic strong odour according to the commercial description of the substance.
pH :	Not applicable
Melting point/range (°C) :	= 34.6 °C (OECD 102)
Initial boiling point/range (°C) :	= 325 °C (OECD 103)
Flash point (closed cup) :	> 180°C
Evaporation rate :	Not available
Flammability (solid/gas) :	Not applicable
Explosive properties (St class) :	N/A
Vapour pressure (Pa) :	VP = 0.085 Pa at 25°C (OECD 104)
Vapour density :	Not available
Relative density (d 20/20) :	= 0.990 at 21.6°C (OECD 109)
Water solubility (20°C) :	= 0.3 mg/l at 20°C (OECD 105)
Partition coef. (n-octanol/water) :	Log Kow = 5.79 (OECD 123)
Auto-ignition temperature (°C) :	Not available
Decomposition temperature :	Not available
Viscosity :	Not available
Oxidizing properties :	Not available

9.2 Other safety information

9.2.1 Explosive properties (Measured)

No data available at this time.

10 STABILITY AND REACTIVITY

10.1 Reactivity

No reaction known with water.

10.2 Chemical stability

Good stability at standard temperature.

10.3 Possibility of hazardous reactions

Not known.

10.4 Conditions to avoid

Avoid temperatures above or at least 5 °C below flash point for any flammable liquids.

Do not heat closed containers.

Avoid contact with oxidizing agents.

10.5 Incompatible materials

Not known.

Firmenich

GHS Safety Data Sheet

According to Regulation ST/SG/AC.10/30/Rev.8 UN GHS

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

10.6 Hazardous decomposition products

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

11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

(a) acute toxicity

Acute oral toxicity : LD50 > 2000 mg/kg (Conclusion of the Weight of Evidence based on 3 studies)

Acute dermal toxicity : LD50 > 2000 mg/kg (Conclusion of the Weight of Evidence based on 2 studies)

(b) skin corrosion/irritation

Primary Skin irritation (Rabbit, OECD 404, Semi-occlusive): Non irritant

(c) serious eye damage/irritation

Acute Eye irritation (Rabbit): Non irritant (Conclusion of the Weight of Evidence based on 2 studies)

(d) respiratory or skin sensitisation

Skin sensitization : Sensitising to skin (Conclusion of the Weight of Evidence based on 9 studies)

(e) germ cell mutagenicity

Bacterial Reverse Mutation test (Ames) (Salmonella, OECD 471, With and without S9, 5 strains):

Non mutagenic

Data on analogue - In vitro mammalian cell gene mutation test (Mouse, OECD 476, Mouse lymphoma assay): Non mutagenic

In vitro Mammalian Chromosome Aberration Test (OECD 473): No chromosomal aberration (Conclusion of the Weight of Evidence based on 2 studies)

(f) carcinogenicity

No data available

(g) reproductive toxicity

Data on analogue - One-Generation Reproduction Toxicity Study (Rat, OECD 415, Gavage, 72 day(s)): NOAEL >= 1000 mg/kg/day

Data on analogue - Prenatal development toxicity study (Rat, OECD 414, Gavage, 15 day(s)):

NOEL (development) >= 1000 mg/kg/day

NOEL >= 1000 mg/kg/day

(h) STOT-single exposure

No data available

(i) STOT-repeated exposure

Data on analogue - Repeated Dose 90-Day Oral Toxicity Study in Rodents (Rat, OECD 408, Gavage): NOEL >= 1000 mg/kg/day

Firmenich

GHS Safety Data Sheet

According to Regulation ST/SG/AC.10/30/Rev.8 UN GHS

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

(j) aspiration hazard
No data available

12 ECOLOGICAL INFORMATION

12.1 Toxicity

Alga, Growth Inhibition Test (*Scenedesmus subspicatus*, OECD 201, Static):

72 h ErC10 = 0.421 mg/l (Based on average measured concentrations)

72 h ErC50 (Greater than limit of solubility.)

Daphnia sp. Acute Immobilisation Test (OECD 202): EC50 (Greater than limit of solubility)

Fish, Acute Toxicity Test (OECD 203): LC50 (Greater than limit of solubility)

Data on analogue - Activated Sludge, Respiration Inhibition Test (OECD 209, Static):

3h EC50 > 100 mg/l (No inhibitory effect of the test item at any concentration.)

3h NOEC > 100 mg/l (Based on nominal concentration)

Daphnia magna Reproduction Test (OECD 211, 21 day(s)): NOEC = 0.068 mg/l (Based on average measured concentrations)

Data on analogue - Fish, Early-Life Stage Toxicity Test (*Pimephales promelas*, OECD 210, 33 day(s)): NOEC = 0.027 mg/l (Based on average measured concentrations)

Data on analogue - Determination of the toxic effect of sediment samples on growth, fertility and reproduction of the Nematode (*Caenorhabditis elegans*, ISO 10872-sed, 96 h):

EC10 > 1000 mg test item/kg sediment dry weight

NOEC > 1000 mg test item/kg sediment dry weight (No effects at the highest concentration tested.)

12.2 Persistence and degradability

Ready Biodegradation - Manometric Respirometry Test (OECD 301F, Sludge): Readily biodegradable (90% in 28 day(s))

12.3 Bioaccumulative potential

Log Kow = 5.79 (OECD 123)

12.4 Mobility in soil

Data on analogue - Adsorption coefficient (OECD 121): Log Koc = 4.65

12.5 Results of PBT and vPvB assessment

Not applicable

12.6 Other adverse effects

No data available

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product: The product should be handled according to the instructions given under sections 6, 7 and 8. Dispose of according to local or national regulations. The product should not be allowed to enter drains or the environment

Firmenich

GHS Safety Data Sheet

According to Regulation ST/SG/AC.10/30/Rev.8 UN GHS

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

Contaminated packaging: Empty packaging should be disposed according to local or national regulations by an approved waste handling

14 TRANSPORT INFORMATION

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

UNO

14.1 UN-No:	3077
14.2 Proper Shipping Name:	Environmentally hazardous substance, solid, n.o.s. (CYCLOPENTADECANOLIDE)
14.3 Class:	9
14.4 Packing Group:	III
14.5 Environmental hazards:	Yes

Land transport (ADR/RID)

14.1 UN-No:	3077
14.2 Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CYCLOPENTADECANOLIDE)
14.3 Class:	9
14.4 Packing Group:	III
14.5 Environmental hazards:	Yes
14.6 Special precautions for user:	Refer to section 7

Sea transport (IMDG-Code)

14.1 UN-No:	3077
14.2 Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CYCLOPENTADECANOLIDE)
14.3 Class:	9
14.4 Packing Group:	III
14.5 Environmental hazards:	Yes
Marine pollutant:	Yes
14.6 Special precautions for user:	Refer to section 7
14.7 Maritime transport in bulk according to IMO instruments:	Not applicable

Air transport (ICAO-IATA)

Firmenich

GHS Safety Data Sheet

According to Regulation ST/SG/AC.10/30/Rev.8 UN GHS

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

14.1 UN-No:	3077
14.2 Proper Shipping Name:	Environmentally hazardous substance, solid, n.o.s. (CYCLOPENTADECANOLIDE)
14.3 Class:	9
14.4 Packing Group:	III
14.5 Environmental hazards:	Not applicable
14.6 Special precautions for user:	Refer to section 7
14.7 Maritime transport in bulk according to IMO instruments:	Not applicable

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.

16 OTHER INFORMATION

16.1 Revisions

March-2023 : Version 12 - Updates to sections 1, 2, 3 ,8 ,9, 11, 12, 14, 15, 16

16.2 Key literature references

RIFM database
OECD SIDS
EU IUCLID
Supplier information

16.3 Full text of phrases used under section 2

H317	May cause an allergic skin reaction.
H316	Causes mild skin irritation.
H402	Harmful to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.

Firmenich

GHS Safety Data Sheet

According to Regulation ST/SG/AC.10/30/Rev.8 UN GHS

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

P363 Wash contaminated clothing before reuse.

16.4 Full text of phrases used under section 3

H316	Causes mild skin irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

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 Firmenich, it is the user's obligation to determine conditions of safe use of the product.

Information contained in this document and related material is proprietary to Firmenich. Disclosure to third parties without the prior written consent of Firmenich except where required by applicable laws and regulations and/or reverse engineering are strictly prohibited.