SAFETY DATA SHEET

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Version 2 **Issue date** 18-May-2023

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product Identifier

Product Name 1DD002-ORBITONE® T

CAS No -
EC No 915-730-3
Chemical name Reaction Mass of 1-(1,2,3,4,5,6,7,8-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one and 1-(1,2,3,4,6,7,8,8a-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one and 1-(1,2,3,5,6,7,8,8a-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one
REACH registration number 01-2119489989-04

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

Recommended use Ingredient for fragrance manufacturing
For industrial use only

1.3. Details of the supplier of the safety data sheet

TAKASAGO INTERNATIONAL CHEMICALS (EUROPE) S.A.
AVENIDA DE MAZARRÓN, 49 30120
EL PALMAR (MURCIA)
MURCIA
Tel: +34 968889920
Fax: +34 968880880

E-mail address ticsa_sds@takasago.com

1.4. Emergency telephone number

Emergency telephone Tel: +34-968-889920 Emergency number office hours only

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin corrosion/irritation	Category 2 - (H315)
Skin Sensitization	Category 1B - (H317)
Chronic Aquatic Toxicity	Category 1 - (H410)

2.2. Label Elements

Signal word
Warning

Hazard Statements
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction

H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements
P273 - Avoid release to the environment
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
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

Contains 1-(1,2,3,4,5,6,7,8-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one

2.3. Other Hazards
None known

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	CAS No	EC No	REACH registration number	Concentration	GHS Classification
reaction mass of 1-(1,2,3,4,5,6,7,8-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one and 1-(1,2,3,4,6,7,8,8a-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one and 1-(1,2,3,5,6,7,8,8a-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one	-	915-730-3	01-2119489989-04	90 - 100%	Skin Irrit. 2 (H315) Skin Sens. 1B (H317) Aquatic Acute 2 (H401) Aquatic Chronic 1 (H410)

Chemical name	CAS No	EC No	Concentration
1-(1,2,3,4,5,6,7,8-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one	54464-57-2	259-174-3	55-65%
1-(1,2,3,5,6,7,8,8a-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one	68155-66-8	268-978-3	10-30%
1-(1,2,3,4,6,7,8,8a-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one	68155-67-9	268-979-9	10-15%

Full text of H- and EUH-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice When in doubt or if symptoms are observed, get medical advice.

Inhalation Remove casualty to fresh air and keep warm and at rest. In case of respiratory tract irritation, consult a physician.

Skin contact Change contaminated, saturated clothing. After contact with skin, wash immediately with plenty of water and soap. In case of skin reactions, consult a physician.

Eye contact In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Ingestion If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting.

Self-protection of the first aider Use personal protection recommended in Section 8.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms No known symptoms to date.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Foam. Carbon dioxide (CO2). Dry extinguishing powder.

Large Fire Alcohol resistant foam. Water spray.

Unsuitable extinguishing media Full water jet.

5.2. Special hazards arising from the substance or mixture

In case of fire may be liberated. Carbon monoxide. Carbon dioxide (CO2). Burning produces heavy smoke. Do not inhale explosion and combustion gases.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Use water spray jet to protect personnel and to cool endangered containers. Move undamaged containers from immediate hazard area if it can be done safely. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8. Remove all sources of ignition. Provide adequate ventilation as well as local exhaustion at critical locations. See section 7 for more information.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains. Ensure waste is collected and contained.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Clear contaminated areas thoroughly.

6.4. Reference to other sections

See Section 13: DISPOSAL CONSIDERATIONS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Wear protective gloves and eye/face protection. See Section 8 for information on appropriate personal protective equipment. Remove all sources of ignition. Provide adequate ventilation as well as local exhaustion at critical locations. Handle and open container with care.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. Wash hands before

breaks and after work. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions Keep container tightly closed in a cool, well-ventilated place. Store in a dry place. Protect from direct sunlight. Remove all sources of ignition. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

7.3. Specific end use(s)

Specific Use(s) Not relevant.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits None

Derived No Effect Level (DNEL)

Type	Exposure route	Derived No Effect Level (DNEL)
Worker Long Term Systemic Health Effects	Inhalation	11.75 mg/m³
Worker Long Term Systemic Health Effects	Dermal	20.18 mg/kg bw/day
Consumer Long Term Systemic Health Effects	Inhalation	2.9 mg/m³
Consumer Long Term Systemic Health Effects	Dermal	10.12 mg/kg bw/day
Consumer Long Term Systemic Health Effects	Oral	1.67 mg/kg bw/day

Predicted No Effect Concentration (PNEC)

Fresh Water	2.8 mg/l
Freshwater sediment	3.73 mg/kg sediment dw
Intermittent release	13 mg/l
Sea Water	0.28 mg/l
Sea sediment	0.75 mg/kg sediment dw
Food chain	10 mg/kg food
Impact on sewage treatment	10 mg/l
Soil	0.705 mg/kg soil dw

8.2. Exposure controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection Eye glasses with side protection.

Hand protection Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training.

Skin and body protection Wear appropriate personal protective clothing to prevent skin contact.

Respiratory protection If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

Environmental exposure controls Prevent product from entering drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance Liquid
Color Colorless to pale yellow

Odor	woody, ambergris, Floral, violet		
Melting point / freezing point	< -20 °C		OECD Test No. 102: Melting Point/ Melting Range
Boiling point / boiling range	290.4 °C		OECD Test No. 103: Boiling Point
Flammability (solid, gas)	No data available		
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Flash point	138 °C		CC (closed cup)
Autoignition temperature	260 °C		Regulation (EC) No. 440/2008, Annex, A.15
Decomposition temperature	No data available		
pH	No data available		
Kinematic viscosity	No data available		
Dynamic viscosity	32.61 mPa.s	@ 20°C	OECD Test No. 114: Viscosity of Liquids
Water solubility	Slightly soluble -2.68 mg/l	@ 20°C	OECD Test No. 105: Water Solubility
Solubility in other solvents	No data available		
Partition coefficient: n-octanol/water	Log Pow = 5.65	@ 30°C	OECD Test No. 117: Partition Coefficient (n-octanol/water), HPLC Method
Vapor pressure	0.233 Pa	@ 23°C	OECD Test No. 104: Vapor Pressure
Specific gravity	0.962-0.970	@ 20°C	
Specific gravity	0.959-0.967	@ 25°C	
Vapor density	No data available		
Particle characteristics	No data available		

9.2. Other information

No information available

SECTION 10: Stability and reactivity

10.1. Reactivity
None under normal use conditions.

10.2. Chemical stability
Stable under normal conditions. Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
None under normal processing.

10.4. Conditions to avoid
Extremes of temperature and direct sunlight.

10.5. Incompatible materials
Strong oxidizing agents. Strong acids. Strong bases.

10.6. Hazardous decomposition products
None under normal use conditions.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity - Oral

Results	LD50 > 5000 mg/kg
Species	rats
Method	OECD Test No. 401: Acute Oral Toxicity

Acute toxicity - Dermal

Results	LD50 > 5000 mg/kg
Species	rats
Method	OECD Test No. 402: Acute Dermal Toxicity

Acute toxicity - Inhalation

Results	No information available

Skin corrosion/irritation

Results	Irritant
Species	in vitro
Method	OECD Test No. 439: In Vitro Skin Irritation: Reconstructed Human Epidermis Test Method

Serious eye damage/irritation

Results	Non-irritant
Method	QSAR (Quantitative Structure-Activity Relationship)

Respiratory or skin sensitization

Exposure route	Skin sensitization
Results	Skin sensitizer
Species	mouse
Method	OECD Test No. 429: Skin Sensitization: Local Lymph Node Assay

Germ cell mutagenicity

Results	Negative
Species	in vitro
Method	OECD Test No. 473: In vitro Mammalian Chromosome Aberration Test
Results	Negative
Species	in vitro
Method	OECD Test No. 476: In vitro Mammalian Cell Gene Mutation Test
Results	Negative
Species	in vitro
Method	OECD Test No. 471: Bacterial Reverse Mutation Test
Results	Negative
Species	in vivo
Method	OECD Test No. 474: Mammalian Erythrocyte Micronucleus Test

Carcinogenicity

Results	No information available

Reproductive toxicity

Results	NOAEL = 240 mg/kg/day Effects on fertility
Species	rats
Method	OECD Test No. 414: Prenatal Development Toxicity Study
Results	NOAEL = 480 mg/kg/day Developmental toxicity
Species	rats
Method	OECD Test No. 414: Prenatal Development Toxicity Study

Specific target organ toxicity - Single exposure

Results	No information available

Specific target organ toxicity - Repeated exposure

Exposure route	Oral
Exposure time	90 days
Results	NOAEL = 120 mg/kg/day
Species	rats
Method	OECD Test No. 408: Repeated Dose 90-Day Oral Toxicity Study in Rodents

Aspiration hazard

Results	No information available

11.2. Information on other hazards

No information available

SECTION 12: Ecological information

12.1. Toxicity

Acute Toxicity

Endpoint type	Fish
Exposure time	96 hours
Results	LC50 = 1.3 mg/l
Species	Lepomis macrochirus (Bluegill)
Method	OECD Test No. 203: Fish, Acute Toxicity Test

Endpoint type	Crustacea
Exposure time	48 hours
Results	EC50 = 1.38 mg/l
Species	Daphnia Magna (Water Flea)
Method	OECD Test No. 202: Daphnia sp., Acute Immobilization Test

Endpoint type	Algae
Exposure time	72 hours
Results	EC50 > 2.6 mg/l
Species	Scenedesmus subspicatus
Method	OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test

Endpoint type	Algae
Exposure time	72 hours
Results	NOEC ≥ 2.6 mg/l
Species	Scenedesmus subspicatus
Method	OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test

Chronic Toxicity

Endpoint type	Fish
Exposure time	30 days
Results	NOEC = 0.16 mg/l
Species	Brachydanio rerio (zebra-fish)
Method	OECD Test No. 210: Fish, Early-Life Stage Toxicity Test

Endpoint type	Crustacea
Exposure time	21 days
Results	NOEC = 0.028 mg/l
Species	Daphnia Magna (Water Flea)
Method	OECD Test No. 211: Daphnia magna Reproduction Test

Endpoint type	Freshwater sediment
Exposure time	28 days
Results	NOEC = 17.1 mg/l
Species	Lumbriculus variegatus
Method	OECD Test No. 218: Sediment-Water Chironomid Toxicity Using Spiked Sediment

12.2. Persistence and degradability

Biodegradation

Results	Not readily biodegradable
Method	OECD Test No. 301C: Ready Biodegradability: Modified MITI Test (I) (TG 301 C)

Hydrolysis

Results	No information available

12.3. Bioaccumulative potential

Bioconcentration factor (BCF)	Bioconcentration factor (BCF) = 391 L/kg OECD Test No. 305: Bioconcentration: Flow-through Fish Test.

Partition Coefficient (n-octanol/water)	Log Pow = 5.65 @ 30°C OECD Test No. 117: Partition Coefficient (n-octanol/water), HPLC Method

12.4. Mobility in soil

Soil-water partition coefficient	No information available

12.5. Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Endocrine disrupting properties

No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products	Dispose of waste product or used containers according to local regulations.
Contaminated packaging	Do not reuse container. Dispose of waste product or used containers according to local regulations.

SECTION 14: Transport information

Sea transport (IMDG)

14.1 UN/ID no	3082
14.2 Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (1-(1,2,3,4,5,6,7,8-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one)
14.3 Hazard Class	9
14.4 Packing group	III
14.5 Marine Pollutant	Yes
14.6 Special Provisions	None
EmS No	F-A S-F

ADR/RID

14.1 UN/ID no	3082
14.2 Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (1-(1,2,3,4,5,6,7,8-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one)
14.3 Hazard Class	9
14.4 Packing group	III
14.5 Environmental Hazard	Yes
14.6 Special Provisions	None

Air transport (ICAO-TI / IATA-DGR)

14.1 UN/ID no	3082
14.2 Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (1-(1,2,3,4,5,6,7,8-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one)
14.3 Hazard Class	9
14.4 Packing group	III
14.5 Environmental Hazard	Yes
14.6 Special Provisions	None

SECTION 15: Regulatory information

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

Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work .

Registration, Evaluation, Authorization, and Restriction of Chemicals (REACh) Regulation (EC 1907/2006) .

The Classification, Labeling and Packaging of Substances and Mixtures (CLP) Regulation (EC 1272/2008) .

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance

SECTION 16: Other information

Full text of H-Statements referred to under section 3
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H401 - Toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Legend

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road	ATE	Acute Toxicity Estimate
DNEL	Derived No Effect Level (DNEL)	GHS	Globally Harmonized System (GHS)
IATA	International Air Transport Association (IATA)	IMDG	International Maritime Dangerous Goods (IMDG)
PNEC	Predicted No Effect Concentration (PNEC)	PBT	Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
vPvB	Very Persistent and very Bioaccumulative (vPvB) Chemicals		

Key literature references and sources for data
RIFM/IOFI database
Supplier

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Where the handling, storage and disposal of this material is beyond the immediate control of Takasago, it shall be the user's responsibility to determine safe conditions for use of this product. The user assumes all liability for loss, injury, damage or expense resulting from the improper use of this product.

End of Safety Data Sheet