SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 2020/878)

|>SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

REACH: 01-2119971808-21

Product name : LYRAL TOCOPHEROL

Product code : H12092.

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

Use of the substance/mixture: Raw material used in perfumery preparations.

|> 1.3. Details of the supplier of the safety data sheet

Registered company name : I.F.F. (Nederland) B.V. FRAGRANCE ING. (Hangzhou).

Address : .5048.AN TILBURG..

Telephone : +31134642211. Fax : +31134636032.

sds@iff.com

Distributor : BLH s.a.s.

Address : ZAC du Pilon - 06460 SAINT VALLIER DE THIEY

Tèl : 04 92 60 35 60 - Fax : 04 92 60 35 69

Website : www.blhsas.com

|> 1.4. Emergency telephone number : +33 (0)1 45 42 59 59.

Association/Organisation : INRS / ORFILA http://www.centres-antipoison.net.

|>SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

Skin sensitisation, Category 1 (Skin Sens. 1, H317).

This substance does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

This substance does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Label elements

|> In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard pictograms :

GHS07

Signal Word :

WARNING

Product identifiers :

EC 233-466-0	REACTION MASS OF 3-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDEHYDE AND 4-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDE 2H-1-BENZOPYRAN-6-OL, 3,4-DIHYDRO-2,5,7,8-TETRAMETHYL-2-(4,8,12-TRIMETHYLTRIDECYL)-

Hazard statements :

H317	May cause an allergic skin reaction.

Precautionary statements - Prevention :

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves.

Precautionary statements - Response :

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

Precautionary statements - Disposal :

P501 Dispose of contents/container to hazardous or special waste collection point.

2.3. Other hazards

The substance does not fulfil the PBT or vPvP criteria in accordance with annexe XIII of the REACH regulations EC 1907/2006.

|>SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

|> Composition :

Identification	Classification (EC) 1272/2008	Note	%
REACH: 01-2119971808-21 REACTION MASS OF 3-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDEHYDE AND 4-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDE	GHS07 Wng Skin Sens. 1B, H317		90-100
CAS: 10191-41-0 EC: 233-466-0 2H-1-BENZOPYRAN-6-OL, 3,4-DIHYDRO-2,5,7,8-TETRAMETHYL-2-(4,8,12-TRIMETHYLTRIDECYL)-	GHS07 Wng Skin Sens. 1B, H317		0.1-1

Specific concentration limits:

Identification	Specific concentration limits	ATE
REACH: 01-2119971808-21 REACTION MASS OF 3-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDEHYDE AND 4-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDE		oral: ATE = 4.971 mg/kg BW

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. description of first aid measures

In the event of splashes or contact with skin :

Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognised cleaner.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

In the event of an allergic reaction, seek medical attention.

If the contaminated aera is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

In the event of swallowing :

Do not give the patient anything orally.

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water and consult a doctor.

Seek medical attention immediately, showing the label.

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

No data available.

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

No data available.

SECTION 5 : FIREFIGHTING MEASURES

Non-flammable.

5.1. Extinguishing media

Suitable methods of extinction

In the event of a fire, use :

- carbon dioxide (CO2)
- powder
- foam

Unsuitable methods of extinction

In the event of a fire, do not use :

- water jet

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO2)

5.3. Advice for firefighters

No data available.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non first aid worker

Avoid any contact with the skin and eyes.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Clean preferably with a detergent, do not use solvents.

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the substance is handled.

Individuals with a history of skin sensitisation should not, under any circumstance, handle this substance.

7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Fire prevention :

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the substance is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

No data available.

|>SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No data available.

Derived no effect level (DNEL) or derived minimum effect level (DMEL):

REACTION MASS OF 3-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDEHYDE AND 4-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDE

|> **Final use:** **Workers.**

Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	1.45 mg/kg body weight/day
Exposure method:	Dermal contact.
Potential health effects:	Long term local effects.
DNEL :	2.5 mg of substance/cm2
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.
DNEL :	3.67 mg of substance/m3

|> **Final use:** **Consumers.**

Exposure method:	Ingestion.
Potential health effects:	Long term systemic effects.
DNEL :	0.63 mg/kg body weight/day
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	0.87 mg/kg body weight/day
Exposure method:	Dermal contact.
Potential health effects:	Long term local effects.
DNEL :	1.5 mg of substance/cm2
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.
DNEL :	1.09 mg of substance/m3

Predicted no effect concentration (PNEC):

REACTION MASS OF 3-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDEHYDE AND 4-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDE

Environmental compartment:	Soil.
PNEC :	32.1 µg/kg
Environmental compartment:	Fresh water.
PNEC :	11.8 µg/l
Environmental compartment:	Sea water.
PNEC :	1.18 µg/l
Environmental compartment:	Fresh water sediment.
PNEC :	195 µg/kg
Environmental compartment:	Marine sediment.
PNEC :	19.5 µg/kg
Environmental compartment:	Waste water treatment plant.
PNEC :	0.2 mg/l

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :

Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles in accordance with standard EN166.

- Hand protection

Wear suitable protective gloves in the event of prolonged or repeated skin contact.

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN ISO 374-1.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

- Body protection

Avoid skin contact.

Wear suitable protective clothing.

Suitable type of protective clothing :

In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605/A1 to prevent skin contact.

In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034/A1 to prevent skin contact.

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	
Physical state :	Fluid liquid.
Colour	
Unspecified	
Odour	
Odour threshold :	Not stated.
Melting point	
Melting point/melting range :	Not specified.
Freezing point	
Freezing point / Freezing range :	Not stated.
Boiling point or initial boiling point and boiling range	
Boiling point/boiling range :	Not specified.
Flammability	
Flammability (solid, gas) :	Not stated.
Lower and upper explosion limit	
Explosive properties, lower explosivity limit (%) :	Not stated.
Explosive properties, upper explosivity limit (%) :	Not stated.
Flash point	
Flash Point :	94.00 °C.
Auto-ignition temperature	
Self-ignition temperature :	Not specified.
Decomposition temperature	
Decomposition point/decomposition range :	Not specified.
pH	
pH :	Not relevant.
pH (aqueous solution) :	Not stated.
Kinematic viscosity	
Viscosity :	Not stated.
Solubility	
Water solubility :	Insoluble.
Fat solubility :	Not stated.

Partition coefficient n-octanol/water (log value)

Partition coefficient: n-octanol/water : log Pow: 2,080

Vapour pressure

Vapour pressure (50°C) : Not relevant.

Density and/or relative density

Density : CoA

Relative vapour density

Vapour density : Not stated.

9.2. Other information

No data available.

9.2.1. Information with regard to physical hazard classes

No data available.

9.2.2. Other safety characteristics

No data available.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This substance is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Avoid :

- heat

10.5. Incompatible materials

Keep away from :

- strong acids
- alkalis
- oxidising agents

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO2)

SECTION 11 : TOXICOLOGICAL INFORMATION

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

May cause an allergic reaction by skin contact.

11.1.1. Substances

Acute toxicity :

REACTION MASS OF 3-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDEHYDE AND 4-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDE

Oral route : LD50 = 4.971 mg/kg bodyweight/day
Species : Rat
OECD Guideline 401 (Acute Oral Toxicity)

Dermal route : LD50 > 5000 mg/kg bodyweight/day
Species : Rabbit
OECD Guideline 402 (Acute Dermal Toxicity)

Germ cell mutagenicity :

REACTION MASS OF 3-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDEHYDE AND 4-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDE

Mutagenesis (in vivo) : Negative.
Species : Mouse

OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

Mutagenesis (in vitro) : Positive.
Species : Mammalian Cell Line
OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)

Ames test (in vitro) : Negative.
With or without metabolic activation.

11.2. Information on other hazards

|>SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity

|> 12.1.1. Substances

REACTION MASS OF 3-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDEHYDE AND 4-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDE

Fish toxicity : LC50 = 11.8 mg/l
Species : Pimephales promelas
Duration of exposure : 96 h
OECD Guideline 203 (Fish, Acute Toxicity Test)

Crustacean toxicity : EC50 = 15 mg/l
Species : Daphnia magna
Duration of exposure : 48 h
OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Algae toxicity : ECr50 = 25.4 mg/l
Species : Pseudokirchnerella subcapitata
Duration of exposure : 72 h
OECD Guideline 201 (Alga, Growth Inhibition Test)

NOEC = 5.95 mg/l
Species : Pseudokirchnerella subcapitata
Duration of exposure : 72 h
OECD Guideline 201 (Alga, Growth Inhibition Test)

12.2. Persistence and degradability

12.2.1. Substances

REACTION MASS OF 3-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDEHYDE AND 4-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDE

Biodegradability : Rapidly degradable.

12.3. Bioaccumulative potential

|> 12.3.1. Substances

REACTION MASS OF 3-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDEHYDE AND 4-(4-HYDROXY-4-METHYLPENTYL)CYCLOHEX-3-ENE-1-CARBALDE

Octanol/water partition coefficient : log Koe = 2.1
OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Endocrine disrupting properties

No data available.

12.7. Other adverse effects

No data available.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the substance and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

SECTION 14 : TRANSPORT INFORMATION

Exempt from transport classification and labelling.

14.1. UN number or ID number

-

14.2. UN proper shipping name

-

14.3. Transport hazard class(es)

-

14.4. Packing group

-

14.5. Environmental hazards

-

14.6. Special precautions for user

-

14.7. Maritime transport in bulk according to IMO instruments

-

|>SECTION 15: Regulatory information

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

|> Classification and labelling information included in section 2:

The following regulations have been used:

- EU Regulation No. 1272/2008 amended by EU Regulation No. 2022/692 (ATP 18)

Container information:

No data available.

Restrictions applied under Title VIII of Regulation (EC) No. 1907/2006 (REACH):

Substance not restricted under Annex XVII of Regulation (EC) no. 1907/2006 (REACH): https://echa.europa.eu/substances-restricted-under-reach.

|> Explosives precursors :

The substance is not subject to Regulation (EU) 2019/1148 on the marketing and use of explosives precursors.

Particular provisions :

No data available.

15.2. Chemical safety assessment

No data available.

|>SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the substance and not as a guarantee of the properties thereof.

Wording of the phrases mentioned in section 3 :

H317 May cause an allergic skin reaction.

|> Abbreviations and acronyms :

LD50 : The dose of a test substance resulting in 50% lethality in a given time period.

LC50 : The concentration of a test substance resulting in 50% lethality in a given period.

EC50 : The effective concentration of substance that causes 50% of the maximum response.

ECr50 : The effective concentration of substance that causes 50% reduction in growth rate.

NOEC : The concentration with no observed effect.

REACH : Registration, Evaluation, Authorization and Restriction of Chemical Substances.

ATE : Acute Toxicity Estimate

BW : Body Weight

DNEL : Derived No-Effect Level

PNEC : Predicted No-Effect Concentration

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 Organisation

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

WGK : Wassergefahrdungsklasse (Water Hazard Class).

GHS07 : Exclamation mark

PBT: Persistent, bioaccumulable and toxic.

vPvB : Very persistent, very bioaccumulable.

SVHC : Substances of very high concern.

|> Modification compared to the previous version