

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

FORYL LHC

DRP0145DE

Version
4.0

Revision Date:
24.11.2022

Date of last issue: 02.11.2021
Date of first issue: 21.02.2012

Hazard pictograms :



Signal word :

Danger

Hazard statements :

H318 Causes serious eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P273 Avoid release to the environment.
P280 Wear eye protection/ face protection.

Response:

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P391 Collect spillage.

Disposal:

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

Hazardous components which must be listed on the label:

Alcohols C12-14, ethoxylated

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature

: Mixture

Alcohols, linear, ethoxylated
additives

Components

Chemical name	CAS-No. EC-No. Index-No.	Classification	Concentration (% w/w)

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	Registration number		
Alcohols C12-14, ethoxylated	68439-50-9 Polymer	Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 3; H412 M-Factor (Acute aquatic toxicity): 1	>= 70 - < 90
2-methylpentane-2,4-diol	107-41-5 203-489-0 603-053-00-3 01-2119539582-35	Eye Irrit. 2; H319 Skin Irrit. 2; H315 Repr. 2; H361d	>= 1 - < 3

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : First aider needs to protect himself.
Move out of dangerous area.
Do not leave the victim unattended.
Symptoms may be delayed.
Get medical attention immediately.
Show this safety data sheet to the doctor in attendance.
Take off contaminated clothing and shoes immediately.
- If inhaled : Move to fresh air.
If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a physician immediately.
Contact a poison control center.
- In case of skin contact : Wash with plenty of soap and water.
Cover wound with sterile dressing.
Take off contaminated clothing and shoes immediately.
Call a physician immediately.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Keep eye wide open while rinsing.
If easy to do, remove contact lens, if worn.
Protect unharmed eye.
Continue rinsing eyes during transport to hospital.
Get medical attention immediately.
- If swallowed : IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
If a person vomits when lying on his back, place him in the recovery position.
Get medical attention immediately.
Contact a poison control center.

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4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

Risks : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.
Basic medical care.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Product is compatible with standard fire-fighting agents.

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not use a solid water stream as it may scatter and spread fire.
Hazardous decomposition products formed under fire conditions.
Exposure to decomposition products may be a hazard to health.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment as required.

Further information : Standard procedure for chemical fires.
Evacuate area.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Pay attention to flashback.
In the event of fire and/or explosion do not breathe fumes.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Evacuate area.
Immediately evacuate personnel to safe areas.
First aider needs to protect himself.
Use personal protective equipment.
Avoid contact with skin, eyes and clothing.

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Remove all sources of ignition.
In the case of vapour formation use a respirator with an approved filter.
In the case of dust or aerosol formation use respirator with an approved filter.
Material can create slippery conditions.
Forms slippery/greasy layers with water.
Take precautionary measures against static discharge.
Treat recovered material as described in the section "Disposal considerations".

6.2 Environmental precautions

Environmental precautions : Avoid release to the environment.
Do not flush into surface water or sanitary sewer system.
Do not allow contact with soil, surface or ground water.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
Retain and dispose of contaminated wash water.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Ventilate the area.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.
Clean contaminated surface thoroughly.
Large spills should be collected mechanically (remove by pumping) for disposal.

6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : Ground and bond container and receiving equipment.
Technical measures and the application of appropriate working methods take precedence over the use of personal protective equipment.

Local/Total ventilation : Use only with adequate ventilation.

Advice on safe handling : For personal protection see section 8.
Avoid inhalation, ingestion and contact with skin and eyes.
Do not breathe vapours or spray mist.
Avoid release to the environment.
Keep container tightly closed.
Wash face, hands and any exposed skin thoroughly after handling.
Ensure that eye flushing systems and safety showers are located close to the working place.

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Floors, walls and other surfaces must be regularly cleaned.

Advice on protection against fire and explosion : Normal measures for preventive fire protection. Avoid formation of aerosol. Keep away from heat and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. When using do not eat, drink or smoke. Wash hands before breaks and at the end of workday. Regular cleaning of equipment, work area and clothing. Contaminated work clothing should not be allowed out of the workplace. Store personal protection equipment in a clean location away from the work area.

Dust explosion class : Not applicable

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Observe label precautions. Stir before use.

Further information on storage conditions : Do not store in or use containers except the original product package.

Advice on common storage : Keep away from food and drink. Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Storage class (TRGS 510) : 10

Recommended storage temperature : 5 - 35 °C

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : For further information, refer to the product technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
2-methylpentane-2,4-diol	Workers	Inhalation	Long-term systemic effects	44,4 mg/m ³

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	Workers	Inhalation	Acute local effects	98 mg/m ³
	Workers	Inhalation	Long-term local effects	49 mg/m ³
	Workers	Skin contact	Long-term systemic effects	42 mg/kg bw/day
	Consumers	Skin contact	Long-term systemic effects	15 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	1,5 mg/kg bw/day
	Consumers	Inhalation	Acute local effects	49 mg/m ³
	Consumers	Inhalation	Long-term systemic effects	7,8 mg/m ³
	Consumers	Inhalation	Long-term local effects	25 mg/m ³

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
2-methylpentane-2,4-diol	Fresh water	0,429 mg/l
	Marine water	0,0429 mg/l
	Fresh water sediment	1,79 mg/kg dry weight (d.w.)
	Marine sediment	0,179 mg/kg dry weight (d.w.)
	Sewage treatment plant	20 mg/l
	Soil	0,11 mg/kg dry weight (d.w.)
	Intermittent use/release	4,29 mg/l

Lead components LCID method

Component Type	Value type	Component	Remarks
Lead substance(s)	aquatic environment	Alcohols C12-14, ethoxylated	
Lead substance(s)	ozone layer		Not relevant
Lead substance(s)	Inhalation		Not relevant
Lead substance(s)	Dermal		Not relevant
Lead substance(s)	Oral		Not relevant
Local effects	Skin	2-methylpentane-2,4-diol	applicable
Local effects	Inhalation		Not relevant
Local effects	Eyes	Alcohols C12-14, ethoxylated, 2-methylpentane-2,4-diol	applicable

8.2 Exposure controls

Engineering measures

Handle only in a place equipped with local exhaust (or other appropriate exhaust).

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Personal protective equipment

- Eye protection : Tightly fitting safety goggles
Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.
Equipment should conform to EN 166
- Hand protection
Material : Protective gloves complying with EN 374.
- Remarks : Gloves must be inspected prior to use. Wash hands before breaks and at the end of workday. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. When handling hot material, use heat resistant gloves. Splash exposure.
- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place. Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.
- Respiratory protection : In case of inadequate ventilation wear respiratory protection. In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
Suitable respiratory equipment:
Respirator with combination filter for vapour/particulate (EN 141)
See information supplied by the manufacturer.
- Filter type : Combined particulates, inorganic and acidic gas/vapour, ammonia/amines and organic vapour type (ABEK-P)
- Protective measures : Handle in accordance with good industrial hygiene and safety practice.
Follow the skin protection plan.
-

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Physical state : liquid
- Colour : blue, green, greenish-blue
- Odour : odourized

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Odour Threshold	:	No data available
Melting point/range	:	ca. 7 °C
Boiling point/boiling range	:	ca. 100 °C
Upper explosion limit / Upper flammability limit	:	7,4 %(V) (20 °C) Solvent
Lower explosion limit / Lower flammability limit	:	1,3 %(V) (20 °C) Solvent
Flash point	:	> 100 °C Based on data from similar materials
Ignition temperature	:	No data available
Decomposition temperature	:	No data available
pH	:	ca. 6 (20 °C) Concentration: 100 %
Viscosity		
Viscosity, dynamic	:	ca. 100 mPa.s (20 °C)
Viscosity, kinematic	:	ca. 102 mm ² /s (20 °C) Method: Calculation method
Solubility(ies)		
Water solubility	:	(20 °C) completely miscible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	study technically not feasible See ingredient/ingredients
Self-ignition	:	Not applicable
Vapour pressure	:	ca. 23 hPa (20 °C) aqueous phase
Relative density	:	ca. 0,98 (20 °C) Method: Calculation method
Density	:	ca. 0,98 g/cm ³ (20 °C)
Relative vapour density	:	Vapours are heavier than air and may spread along floors. Solvent Expert judgement

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9.2 Other information

Explosives	:	Not applicable
Oxidizing properties	:	No data available
Flammability (liquids)	:	Ignitable (see flash point)
Dust explosion class	:	Not applicable
Evaporation rate	:	No data available
Surface tension	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : Avoid radical-forming starting agents, peroxides and reactive metals. No decomposition if stored and applied as directed.

10.4 Conditions to avoid

Conditions to avoid : Protect from contamination.
Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents
Strong reducing agents

10.6 Hazardous decomposition products

Thermal decomposition : No decomposition if stored and applied as directed.
Thermal decomposition can lead to release of irritating gases and vapours.
In case of fire hazardous decomposition products may be produced such as:
Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke.
Other hazardous decomposition products may be formed.

Thermal decomposition : No decomposition if stored and applied as directed.
Thermal decomposition can lead to release of irritating gases and vapours.
In case of fire hazardous decomposition products may be produced such as:
Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke.
Other hazardous decomposition products may be formed.

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SECTION 11: Toxicological information

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

Acute toxicity

Product:

Acute oral toxicity : LD50: > 2.000 mg/kg
Method: Acute toxicity estimate

Acute inhalation toxicity : No data available

Acute dermal toxicity : No data available

Components:

Alcohols C12-14, ethoxylated:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: No information available.
GLP: No information available.
Information taken from reference works and the literature.

Acute inhalation toxicity : No data available

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg
Method: No information available.
GLP: No information available.
Information taken from reference works and the literature.

2-methylpentane-2,4-diol:

Acute oral toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 420
GLP: yes
Information taken from reference works and the literature.

Acute inhalation toxicity : LC50 (Rat): > 66 ppm
Exposure time: 8 h
Test atmosphere: vapour
Method: No information available.
GLP: no
Information taken from reference works and the literature.

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Information taken from reference works and the literature.

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Skin corrosion/irritation

Product:

Remarks : No data available

Components:

Alcohols C12-14, ethoxylated:

Species : Humans
Assessment : No skin irritation
Method : Human patch test
Result : No skin irritation
GLP : No information available.
Remarks : CESIO recommendations for the harmonized classification and labelling of surfactants
Information given is based on data obtained from similar substances.

2-methylpentane-2,4-diol:

Species : Rabbit
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : Mild skin irritation
GLP : yes
Remarks : Information taken from reference works and the literature.

Serious eye damage/eye irritation

Product:

Remarks : Causes serious eye damage.

Components:

Alcohols C12-14, ethoxylated:

Species : Rabbit
Assessment : Causes serious eye damage.
Method : Draize Test
Result : Irreversible effects on the eye
GLP : No information available.
Remarks : CESIO recommendations for the harmonized classification and labelling of surfactants
Information given is based on data obtained from similar substances.

2-methylpentane-2,4-diol:

Species : Rabbit
Exposure time : 4 h
Assessment : Causes serious eye irritation.
Method : OECD Test Guideline 405
Result : Eye irritation
GLP : yes

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Remarks : Information taken from reference works and the literature.

Respiratory or skin sensitisation

Product:

Remarks : No data available

Components:

Alcohols C12-14, ethoxylated:

Test Type : Buehler Test
Exposure routes : Skin contact
Species : Guinea pig
Assessment : Did not cause sensitisation on laboratory animals.
Method : OECD Test Guideline 406
Result : negative
GLP : No information available.

Remarks : Information taken from reference works and the literature.
Information given is based on data obtained from similar substances.

2-methylpentane-2,4-diol:

Test Type : Maximisation Test
Species : Guinea pig
Assessment : Did not cause sensitisation on laboratory animals.
Method : OECD Test Guideline 406
Result : negative
GLP : yes

Remarks : Information taken from reference works and the literature.

Germ cell mutagenicity

Product:

Genotoxicity in vitro : No data available

Genotoxicity in vivo : No data available

Germ cell mutagenicity- Assessment : No data available

Components:

Alcohols C12-14, ethoxylated:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: No information available.

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Information taken from reference works and the literature.
Information given is based on data obtained from similar substances.

Genotoxicity in vivo : No data available

Germ cell mutagenicity- Assessment : No data available

2-methylpentane-2,4-diol:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes
Information taken from reference works and the literature.

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: yes
Information taken from reference works and the literature.

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes
Information taken from reference works and the literature.

Genotoxicity in vivo : No data available

Germ cell mutagenicity- Assessment : In vitro tests did not show mutagenic effects

Carcinogenicity

Product:

Remarks : No data available

Carcinogenicity - Assessment : No data available

Components:

Alcohols C12-14, ethoxylated:

Remarks : No data available

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Carcinogenicity - Assessment : No data available

2-methylpentane-2,4-diol:

Remarks : No data available

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Product:

Effects on fertility : No data available

Effects on foetal development : No data available

Reproductive toxicity - Assessment : No data available

Components:

Alcohols C12-14, ethoxylated:

Effects on fertility : No data available

Effects on foetal development : No data available

Reproductive toxicity - Assessment : No data available

2-methylpentane-2,4-diol:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
General Toxicity - Parent: NOAEL: > 200 mg/kg bw/day
General Toxicity F1: NOAEL: 500 mg/kg bw/day
Fertility: NOAEL: 1.000 mg/kg bw/day
Target Organs: Liver
Method: OECD Test Guideline 421
GLP: yes
Information taken from reference works and the literature.

Species: Rat, male and female
Application Route: Oral
General Toxicity - Parent: NOAEL: 800 mg/kg bw/day
General Toxicity F1: NOAEL: 250 mg/kg bw/day
General Toxicity F2: NOAEL: 250 mg/kg bw/day
Symptoms: Effects on reproduction parameters
Target Organs: Kidney, Liver
Method: OECD Test Guideline 443
GLP: yes

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Information taken from reference works and the literature.

Effects on foetal development

: Species: Rabbit, female
Application Route: Oral
General Toxicity Maternal: NOAEL: 600 mg/kg bw/day
Embryo-foetal toxicity: NOAEL: 250 mg/kg bw/day
Symptoms: Skeletal malformations
Method: OECD Test Guideline 414
GLP: yes
Information taken from reference works and the literature.

Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOAEL: 300 mg/kg bw/day
Embryo-foetal toxicity: NOAEL: 300 mg/kg bw/day
Method: OECD Test Guideline 414
GLP: yes
Information taken from reference works and the literature.

Reproductive toxicity - Assessment

: No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

STOT - single exposure

Product:

Remarks : No data available

Components:

Alcohols C12-14, ethoxylated:

Remarks : No data available

2-methylpentane-2,4-diol:

Remarks : No data available

STOT - repeated exposure

Product:

Remarks : No data available

Components:

Alcohols C12-14, ethoxylated:

Remarks : No data available

2-methylpentane-2,4-diol:

Remarks : No data available

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Repeated dose toxicity

Product:

Remarks : No data available

Components:

Alcohols C12-14, ethoxylated:

Remarks : No data available

2-methylpentane-2,4-diol:

Species : Rat, male and female
NOAEL : 450 mg/kg
Application Route : Oral
Exposure time : 90 d
Control Group : yes
Method : OECD Test Guideline 408
GLP : yes
Remarks : Information taken from reference works and the literature.

Aspiration toxicity

Product:

No data available

Components:

Alcohols C12-14, ethoxylated:

No data available

2-methylpentane-2,4-diol:

No data available

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Components:

Alcohols C12-14, ethoxylated:

Remarks : No data available

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2-methylpentane-2,4-diol:

Remarks : No data available

Experience with human exposure

Product:

General Information : No data available

Inhalation : No data available

Skin contact : No data available

Eye contact : No data available

Ingestion : No data available

Components:

Alcohols C12-14, ethoxylated:

General Information : No data available

Inhalation : No data available

Skin contact : No data available

Eye contact : No data available

Ingestion : No data available

2-methylpentane-2,4-diol:

General Information : No data available

Inhalation : No data available

Skin contact : No data available

Eye contact : No data available

Ingestion : No data available

Neurological effects

Product:

Remarks : No data available

Components:

Alcohols C12-14, ethoxylated:

Remarks : No data available

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2-methylpentane-2,4-diol:

Remarks : No data available

Further information

Product:

Remarks : This product is a mixture. Health hazard information is based on its components.
The toxicological properties of this material have not been fully investigated

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : No data available

Toxicity to daphnia and other aquatic invertebrates : No data available

Toxicity to algae/aquatic plants : No data available

Toxicity to fish (Chronic toxicity) : No data available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : No data available

Toxicity to microorganisms : No data available

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Components:

Alcohols C12-14, ethoxylated:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 2 mg/l
Exposure time: 96 h
Method: ISO 7346/2
GLP: yes

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Information taken from reference works and the literature.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,2 mg/l
Exposure time: 48 h
Test Type: static test
Method: DIN 38412
GLP: yes

Information taken from reference works and the literature.

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 0,7 mg/l
End point: Biomass
Exposure time: 72 h
Test Type: static test
Method: DIN 38412
GLP: yes

Information taken from reference works and the literature.

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC0 (Pseudomonas putida): 10 mg/l
Exposure time: 30 min
Method: DIN 38412
GLP: yes

Information taken from reference works and the literature.

Toxicity to fish (Chronic toxicity) : NOEC: > 0,1 - 1 mg/l
Species: Fish
Method: No information available.
GLP: No information available.
CESIO recommendations for the harmonized classification and labelling of surfactants

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : No data available

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

2-methylpentane-2,4-diol:

Toxicity to fish : LC50 (Carassius auratus (goldfish)): 12.000 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203

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		GLP: no Information taken from reference works and the literature.
		LC50 (Danio rerio (zebra fish)): > 1.000 mg/l Exposure time: 96 h Method: ISO 7346/2 GLP: no Information taken from reference works and the literature.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 5.410 mg/l Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: no Information taken from reference works and the literature.
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): > 429 mg/l End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes Information taken from reference works and the literature.
Toxicity to microorganisms	:	NOEC (Bacteria): >= 200 mg/l Exposure time: 10 d Method: No information available. GLP: No information available. Information taken from reference works and the literature.
Toxicity to fish (Chronic toxicity)	:	No data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	No data available
Toxicity to soil dwelling organisms	:	No data available
Plant toxicity	:	No data available
Sediment toxicity	:	No data available
Toxicity to terrestrial organisms	:	No data available

12.2 Persistence and degradability

Product:

Biodegradability : The total of the organic components contained in the product

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achieve > 60% BOD/COD or CO₂ liberation, or > 70% DOC reduction in tests for ease of degradability - threshold values for 'readily degradable' (e.g. to OECD method 301). Information given is based on data on the components and the ecotoxicology of similar products.

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Photodegradation : No data available

Components:

Alcohols C12-14, ethoxylated:

Biodegradability : Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 95 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: no

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Photodegradation : No data available

2-methylpentane-2,4-diol:

Biodegradability : Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 81 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: yes

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Information taken from reference works and the literature.

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Photodegradation : No data available

12.3 Bioaccumulative potential

Product:

Bioaccumulation : No data available

Components:

Alcohols C12-14, ethoxylated:

Bioaccumulation : No data available

Partition coefficient: n-octanol/water : No data available

2-methylpentane-2,4-diol:

Bioaccumulation : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Partition coefficient: n-octanol/water : log Pow: < 1
Method: Calculation method
Information taken from reference works and the literature.

12.4 Mobility in soil

Product:

Mobility : Medium: Soil
No data available

Medium: Water
No data available

Medium: Sediment
No data available

Medium: Air
No data available

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Stability in soil : No data available

Components:

Alcohols C12-14, ethoxylated:

Mobility : Medium: Soil
No data available

: Medium: Water
No data available

: Medium: Sediment
No data available

: Medium: Air
No data available

Stability in soil : No data available

2-methylpentane-2,4-diol:

Mobility : Medium: Soil
No data available

: Medium: Water
No data available

: Medium: Sediment
No data available

: Medium: Air
No data available

Stability in soil : No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

Alcohols C12-14, ethoxylated:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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2-methylpentane-2,4-diol:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Components:

Alcohols C12-14, ethoxylated:

Remarks : No data available

2-methylpentane-2,4-diol:

Remarks : No data available

12.7 Other adverse effects

Product:

Additional ecological information : Information given is based on data on the components and the ecotoxicology of similar products.
Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of contents/ container to an approved waste disposal plant.
In accordance with local and national regulations.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Do not dispose of waste into sewer.
Do not dispose of together with household waste.

Contaminated packaging : Dispose of contents/ container to an approved waste disposal plant.
Dispose of as unused product.

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SECTION 14: Transport information

14.1 UN number or ID number

ADN : UN 3082
ADR : UN 3082
RID : UN 3082
IMDG : UN 3082
IATA : UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Fatty alcohol ethoxylate)
ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Fatty alcohol ethoxylate)
RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Fatty alcohol ethoxylate)
IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Fatty alcohol ethoxylate)
IATA : Environmentally hazardous substance, liquid, n.o.s.
(Fatty alcohol ethoxylate)

14.3 Transport hazard class(es)

ADN : 9
ADR : 9
RID : 9
IMDG : 9
IATA : 9

14.4 Packing group

ADN
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9
ADR
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9
Tunnel restriction code : (-)

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RID

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

IMDG

Packing group : III
Labels : 9
EmS Code : F-A, S-F

IATA (Cargo)

Packing instruction (cargo aircraft) : 964
Packing instruction (LQ) : Y964
Packing group : III
Labels : Miscellaneous

IATA (Passenger)

Packing instruction (passenger aircraft) : 964
Packing instruction (LQ) : Y964
Packing group : III
Labels : Miscellaneous

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

IATA (Passenger)

Environmentally hazardous : yes

IATA (Cargo)

Environmentally hazardous : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

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REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered: Number on list 3

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. E1 ENVIRONMENTAL HAZARDS

Water hazard class (Germany) : WGK 2 obviously hazardous to water
Classification according to AwSV, Annex 1 (5.2)

TA Luft List (Germany) : Total dust:
Not applicable
Inorganic substances in powdered form:
Not applicable
Inorganic substances in vapour or gaseous form:
Not applicable
Organic Substances:
portion Class 1: < 0,01 %

Carcinogenic substances:
portion Class 2: < 0,01 %
portion Class 3: < 0,01 %

Mutagenic:
others: < 0,01 %

Toxic to reproduction:
Not applicable

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Volatile organic compounds (VOC) content: 0,05 %
Volatile CMR compounds: < 0,01 %

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15.2 Chemical safety assessment

A chemical safety assessment (Chemical Safety Assessment) is not required for this mixture.

SECTION 16: Other information

Full text of H-Statements

H315	:	Causes skin irritation.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H361d	:	Suspected of damaging the unborn child.
H400	:	Very toxic to aquatic life.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Repr.	:	Reproductive toxicity
Skin Irrit.	:	Skin irritation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

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Further information

Classification of the mixture:

Eye Dam. 1	H318
Aquatic Acute 1	H400
Aquatic Chronic 3	H412

Classification procedure:

Calculation method
Calculation method
Calculation method

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