

Safety Data Sheet

LUNANUOVA

Safety Data Sheet dated 22/9/2022, version 5

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

1.1. Product identifier

Mixture identification:

Trade name: LUNANUOVA
Trade code: 022

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

Recommended use:

Coating material

1.3. Details of the supplier of the safety data sheet

Company:
SAN MARCO GROUP S.P.A.
Via Alta 10
30020 MARCON (VE) - Italy -
Tel.+39 041 4569322
Fax. +39 041 5950153

Competent person responsible for the safety data sheet:

sicurezza.prodotti@sanmarcogroup.it

1.4. Emergency telephone number

Technical information: SAN MARCO GROUP SPA +39 041 4569322 (Monday – Friday
9.00-12.30 ; 13.30-17.00)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

Aquatic Chronic 3, Harmful to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:

None

Hazard statements:

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

P102 Keep out of reach of children.

P273 Avoid release to the environment.

Special Provisions:

EUH208 Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

EUH208 Contains 2-octyl-2H-isothiazol-3-one. May produce an allergic reaction.

EUH208 Contains reaction mass of 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7]
and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1). May produce an allergic reaction.

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$

Other Hazards:

No other hazards

SECTION 3: Composition/information on ingredients

022/5

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3.1. Substances

N.A.

3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
>= 0.05% - < 0.1%	2-(2-butoxyethoxy) ethanol	Index number: 603-096-00-8 CAS: 112-34-5 EC: 203-961-6 REACH No.: 01-2119475104-44-XXXX	⚠ 3.3/2 Eye Irrit. 2 H319
>= 0.05% - < 0.1%	3-iodo-2-propynyl butylcarbamate	Index number: 616-212-00-7 CAS: 55406-53-6 EC: 259-627-5	⚠ 3.1/3/Inhal Acute Tox. 3 H331 ⚠ 3.1/4/Oral Acute Tox. 4 H302 ⚠ 3.9/1 STOT RE 1 H372 ⚠ 3.3/1 Eye Dam. 1 H318 ⚠ 3.4.2/1 Skin Sens. 1 H317 ⚠ 4.1/A1 Aquatic Acute 1 H400 M=10. ⚠ 4.1/C1 Aquatic Chronic 1 H410 M=1.
>= 0.01% - < 0.05%	1,2-benzisothiazol-3(2H)-one	Index number: 613-088-00-6 CAS: 2634-33-5 EC: 220-120-9	⚠ 3.1/2/Inhal Acute Tox. 2 H330 ⚠ 3.2/2 Skin Irrit. 2 H315 ⚠ 3.3/1 Eye Dam. 1 H318 ⚠ 3.4.2/1 Skin Sens. 1 H317 ⚠ 3.1/4/Oral Acute Tox. 4 H302 ⚠ 4.1/A1 Aquatic Acute 1 H400 M=1. ⚠ 4.1/C2 Aquatic Chronic 2 H411 M=1. Specific Concentration Limits: C >= 0,05%: Skin Sens. 1 H317
>= 0.01% - < 0.05%	pyrithione zinc	CAS: 13463-41-7 EC: 236-671-3	⚠ 3.7/1B Repr. 1B H360D ⚠ 3.1/2/Inhal Acute Tox. 2 H330 ⚠ 3.1/3/Oral Acute Tox. 3 H301 ⚠ 3.9/1 STOT RE 1 H372 ⚠ 3.3/1 Eye Dam. 1 H318 ⚠ 4.1/A1 Aquatic Acute 1 H400 M=1000. ⚠ 4.1/C1 Aquatic Chronic 1 H410 M=10. Acute Toxicity Estimate: ATE - Oral 221 mg/kg bw ATE - Inhalation (Dust/mist) 0,14 mg/l
>= 0.005% - < 0.01%	terbutryn	CAS: 886-50-0 EC: 212-950-5	⚠ 4.1/A1 Aquatic Acute 1 H400 M=100. ⚠ 4.1/C1 Aquatic Chronic 1 H410 M=100. ⚠ 3.1/4/Oral Acute Tox. 4 H302 ⚠ 3.4.2/1B Skin Sens. 1B H317

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<p>>= 0.00015% - < 0.0015%</p>	<p>2-octyl-2H-isothiazol-3-one</p>	<p>Index number: 613-112-00-5 CAS: 26530-20-1 EC: 247-761-7</p>	<p> ◆ 3.1/2/Inhal Acute Tox. 2 H330 ◆ 3.1/3/Dermal Acute Tox. 3 H311 ◆ 3.1/3/Oral Acute Tox. 3 H301 ◆ 3.2/1 Skin Corr. 1 H314 ◆ 3.3/1 Eye Dam. 1 H318 ◆ 3.4.2/1A Skin Sens. 1A H317 ◆ 4.1/A1 Aquatic Acute 1 H400 M=100. ◆ 4.1/C1 Aquatic Chronic 1 H410 M=100. EUH071 Specific Concentration Limits: C >= 0,0015%: Skin Sens. 1A H317 Acute Toxicity Estimate: ATE - Oral 125 mg/kg bw ATE - Dermal 311 mg/kg bw ATE - Inhalation (Dust/mist) 0,27 mg/l </p>
<p>>= 0.00015% - < 0.0015%</p>	<p>reaction mass of 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)</p>	<p>Index number: 613-167-00-5 CAS: 55965-84-9</p>	<p> ◆ 3.1/2/Inhal Acute Tox. 2 H330 ◆ 3.1/2/Dermal Acute Tox. 2 H310 ◆ 3.1/3/Oral Acute Tox. 3 H301 ◆ 3.2/1C Skin Corr. 1C H314 ◆ 3.3/1 Eye Dam. 1 H318 ◆ 3.4.2/1A Skin Sens. 1A H317 ◆ 4.1/A1 Aquatic Acute 1 H400 M=100. ◆ 4.1/C1 Aquatic Chronic 1 H410 M=100. EUH071 Specific Concentration Limits: C >= 0,6%: Skin Corr. 1C H314 0,06% <= C < 0.6%: Skin Irrit. 2 H315 C >= 0,6%: Eye Dam. 1 H318 0,06% <= C < 0.6%: Eye Irrit. 2 H319 C >= 0,0015%: Skin Sens. 1A H317 </p>

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Wash with plenty of water and soap.

In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

In case of Ingestion:

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

None

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

Treatment:

None

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SECTION 5: Firefighting measures

- 5.1. Extinguishing media
Suitable extinguishing media:
Water.
Carbon dioxide (CO₂).
Extinguishing media which must not be used for safety reasons:
None in particular.
- 5.2. Special hazards arising from the substance or mixture
Do not inhale explosion and combustion gases.
Burning produces heavy smoke.
- 5.3. Advice for firefighters
Use suitable breathing apparatus .
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

- 6.1. Personal precautions, protective equipment and emergency procedures
Wear personal protection equipment.
Remove persons to safety.
See protective measures under point 7 and 8.
- 6.2. Environmental precautions
Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
Suitable material for taking up: absorbing material, organic, sand
- 6.3. Methods and material for containment and cleaning up
Wash with plenty of water.
- 6.4. Reference to other sections
See also section 8 and 13

SECTION 7: Handling and storage

- 7.1. Precautions for safe handling
Avoid contact with skin and eyes, inhalation of vapours and mists.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
See also section 8 for recommended protective equipment.
Advice on general occupational hygiene:
Contaminated clothing should be changed before entering eating areas.
Do not eat or drink while working.
- 7.2. Conditions for safe storage, including any incompatibilities
Keep away from food, drink and feed.
Incompatible materials:
None in particular.
Instructions as regards storage premises:
Adequately ventilated premises.
- 7.3. Specific end use(s)
None in particular

SECTION 8: Exposure controls/personal protection

- 8.1. Control parameters
2-(2-butoxyethoxy)ethanol - CAS: 112-34-5
- OEL Type: EU - TWA(8h): 67.5 mg/m³, 10 ppm - STEL: 101.2 mg/m³, 15 ppm

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- OEL Type: ACGIH - TWA(8h): 10 ppm - Notes: (IFV) - Hematologic, liver and kidney eff
DNEL Exposure Limit Values

2-(2-butoxyethoxy)ethanol - CAS: 112-34-5

Worker Professional: 1.25 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

Consumer: 50.6 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, local effects

Worker Professional: 67.5 mg/m³ - Consumer: 34 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, local effects

Worker Professional: 67.5 mg/m³ - Consumer: 34 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Professional: 20 mg/kg - Consumer: 10 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

2-(2-butoxyethoxy)ethanol - CAS: 112-34-5

Target: Fresh Water - Value: 1 mg/l

Target: Marine water - Value: 0.1 mg/l

Target: Freshwater sediments - Value: 4 mg/kg

Target: Marine water sediments - Value: 0.4 mg/kg

Target: Microorganisms in sewage treatments - Value: 200 mg/l

Target: Food chain - Value: 56 mg/kg

Target: Soil (agricultural) - Value: 0.4 mg/kg

8.2. Exposure controls

Eye protection:

Not needed for normal use. Anyway, operate according good working practices.

Protection for skin:

No special precaution must be adopted for normal use.

Protection for hands:

Not needed for normal use.

Respiratory protection:

Not needed for normal use.

Thermal Hazards:

None

Environmental exposure controls:

None

Appropriate engineering controls:

None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes
Physical state:	Liquid	--	--
Colour:	various	--	--
Odour:	characteristic	--	--
Melting point/freezing point:	N.A.	--	--
Boiling point or initial boiling point and boiling range:	N.A.	--	--
Flammability:	N.A.	--	--

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Lower and upper explosion limit:	N.A.	--	--
Flash point:	N.A.	--	--
Auto-ignition temperature:	N.A.	--	--
Decomposition temperature:	N.A.	--	--
pH:	8	--	--
Kinematic viscosity:	N.A.	--	--
Solubility in water:		--	--
Solubility in oil:	N.A.	--	--
Partition coefficient n-octanol/water (log value):	N.A.	--	--
Vapour pressure:	N.A.	--	--
Density and/or relative density:	0.95 kg/l	--	--
Relative vapour density:	N.A.	--	--
Particle characteristics:			
Particle size:	N.A.	--	--

9.2. Other information
No other relevant information

SECTION 10: Stability and reactivity

- 10.1. Reactivity
Stable under normal conditions
- 10.2. Chemical stability
Stable under normal conditions
- 10.3. Possibility of hazardous reactions
None
- 10.4. Conditions to avoid
Stable under normal conditions.
- 10.5. Incompatible materials
None in particular.
- 10.6. Hazardous decomposition products
None.

SECTION 11: Toxicological information

- 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
Toxicological information of the product:
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 - a) acute toxicity
Not classified
No data available for the product

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- b) skin corrosion/irritation
Not classified
No data available for the product
- c) serious eye damage/irritation
Not classified
No data available for the product
- d) respiratory or skin sensitisation
Not classified
No data available for the product
- e) germ cell mutagenicity
Not classified
No data available for the product
- f) carcinogenicity
Not classified
No data available for the product
- g) reproductive toxicity
Not classified
No data available for the product
- h) STOT-single exposure
Not classified
No data available for the product
- i) STOT-repeated exposure
Not classified
No data available for the product
- j) aspiration hazard
Not classified
No data available for the product

Toxicological information of the main substances found in the product:

3-iodo-2-propynyl butylcarbamate - CAS: 55406-53-6

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat 1056 mg/kg - Notes: female

Test: LD50 - Route: Oral - Species: Rat 1795 mg/kg - Notes: male

Test: LC50 - Route: Inhalation Dust - Species: Rat 0.67 g/m³ - Duration: 4h

Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/kg

c) serious eye damage/irritation:

Test: Eye Irritant - Species: Rabbit

d) respiratory or skin sensitisation:

Test: Skin Sensitization - Species: porcellino d'india

i) STOT-repeated exposure:

Route: Inhalation - Notes: Cat. 1 (larynx)

pyrithione zinc - CAS: 13463-41-7

a) acute toxicity

ATE - Oral 221 mg/kg bw

ATE - Inhalation (Dust/mist) 0,14 mg/l

2-octyl-2H-isothiazol-3-one - CAS: 26530-20-1

a) acute toxicity

ATE - Oral 125 mg/kg bw

ATE - Dermal 311 mg/kg bw

ATE - Inhalation (Dust/mist) 0,27 mg/l

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration $\geq 0.1\%$

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

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The product is classified: Aquatic Chronic 3 - H412

2-(2-butoxyethoxy)ethanol - CAS: 112-34-5

3-iodo-2-propynyl butylcarbamate - CAS: 55406-53-6

a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Daphnia 0.05 mg/l - Notes: 21 d (Daphnia magna)

Endpoint: NOEC - Species: Fish 0.0084 mg/l - Notes: 35 d (Pimephales promeleas)

Endpoint: NOEC - Species: Fish 0.049 mg/l - Duration h: 96 - Notes: (Rainbow trout)

Endpoint: EC50 - Species: Algae 0.022 mg/l - Duration h: 72 - Notes: (Scenedesmus subspicatus)

1,2-benzisothiazol-3(2H)-one - CAS: 2634-33-5

a) Aquatic acute toxicity:

Endpoint: EC10 - Species: Algae 0.04 mg/l - Duration h: 72 - Notes: (Selenastrum capricornutum) (OECD 201)

Endpoint: EC50 - Species: Algae 0.11 mg/l - Duration h: 72 - Notes: (Selenastrum capricornutum) (OECD 201) S2238

Endpoint: EC50 - Species: Daphnia 3.27 mg/l - Duration h: 48 - Notes: (OECD 202) S 2240

Endpoint: LC50 - Species: Fish 1.6 mg/l - Duration h: 96 - Notes: (Oncorhynchus mykiss) (OECD 203) S 2746

Endpoint: NOEC - Species: Daphnia 1.2 mg/l - Notes: 21 d (OECD 211) S 803

Endpoint: NOEC - Species: Fish 0.21 mg/l - Notes: 28 d (OECD 215) S 805

pyrithione zinc - CAS: 13463-41-7

a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Algae 0.051 mg/l - Duration h: 72 - Notes: (Pseudokirchneriella subcapitata) (OECD 201) S 3023

Endpoint: EC50 - Species: Algae 0.013 mg/l - Duration h: 72 - Notes: (Skeletonema costatum) (ISO 10253) literature

Endpoint: EC50 - Species: Daphnia 0.051 mg/l - Duration h: 48 - Notes: (OECD 202) S 3024

Endpoint: LC50 - Species: Fish 0.0104 mg/l - Duration h: 96 - Notes: (Brachydanio rerio) (OECD 203) S 3026

Endpoint: NOEC - Species: Daphnia 0.0022 mg/l - Notes: 21 d (OECD 211) S 3025

Endpoint: NOEC - Species: Fish 0.00125 mg/l - Notes: 28 d (Brachydanio rerio) (OECD 215) S 3027

Endpoint: NOEC - Species: Algae 0.0149 mg/l - Duration h: 72 - Notes: (Pseudokirchneriella subcapitata) (OECD 201) S 3023

Endpoint: NOEC - Species: Algae 0.000146 mg/l - Duration h: 96 - Notes: (Skeletonema costatum) (ISO 10253) literature

terbutryn - CAS: 886-50-0

2-octyl-2H-isothiazol-3-one - CAS: 26530-20-1

a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Daphnia 0.42 mg/l - Duration h: 48 - Notes: OECD 202

Endpoint: EC50 - Species: Algae 0.084 mg/l - Duration h: 72 - Notes: Scenedesmus subspicatus - OECD 201

Endpoint: LC50 - Species: Fish 0.036 mg/l - Duration h: 96 - Notes: Oncorhynchus mykiss - OECD 203

Endpoint: NOEC - Species: Daphnia 0.002 mg/l - Notes: 21d - OECD 211

Endpoint: NOEC - Species: Fish 0.022 mg/l - Notes: 28d Oncorhynchus mykiss - OECD 210

Endpoint: NOEC - Species: Algae 0.004 mg/l - Notes: 72d - OECD 201

reaction mass of 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and

2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) - CAS: 55965-84-9

a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Daphnia 0.1 mg/l - Duration h: 48 - Notes: daphnia magna

Endpoint: EC50 - Species: Algae 0.048 mg/l - Duration h: 72 - Notes: pseudokirchneriella subcapitata

Endpoint: EC50 - Species: Fish 0.22 mg/l - Duration h: 96 - Notes: oncorhynchus mykiss

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Endpoint: NOEC - Species: Algae 0.00064 mg/l - Duration h: 48 - Notes: skeletonema costatum

Endpoint: NOEC - Species: Daphnia 0.004 mg/l - Duration h: 504 - Notes: daphnia magna

Endpoint: NOEC - Species: Fish 0.098 mg/l - Duration h: 672 - Notes: oncorhynchus mykiss

Endpoint: NOEC - Species: Algae 0.0012 mg/l - Duration h: 72 - Notes: pseudokirchneriella subcapitata

12.2. Persistence and degradability

3-iodo-2-propynyl butylcarbamate - CAS: 55406-53-6

Biodegradability: Not persistent and Biodegradable

12.3. Bioaccumulative potential

1,2-benzisothiazol-3(2H)-one - CAS: 2634-33-5

Test: Kow - Partition coefficient 0.7 - Notes: (n-octanol/water) OECD 117 Log Kow (HPLC method)

Test: BCF - Bioconcentration factor 6.95 - Notes: (fish) OECD 305

reaction mass of 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and

2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) - CAS: 55965-84-9

Not bioaccumulative - Test: BCF - Bioconcentration factor 3.16 - Notes: (calculated) S 1177

Not bioaccumulative - Test: Kow - Partition coefficient 0.71 - Notes: (n-octanol/water) S 5

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration $\geq 0.1\%$

12.7. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number or ID number

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

14.2. UN proper shipping name

N.A.

14.3. Transport hazard class(es)

N.A.

14.4. Packing group

N.A.

14.5. Environmental hazards

N.A.

14.6. Special precautions for user

N.A.

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

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Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) n. 2020/878
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

Restriction 3

Restrictions related to the substances contained:

Restriction 75

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)

Regulation (EC) nr 648/2004 (detergents).

Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1

None

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Full text of phrases referred to in Section 3:

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H302 Harmful if swallowed.

H372 Causes damage to organs (larynx) through prolonged or repeated exposure.

H318 Causes serious eye damage.

H317 May cause an allergic skin reaction.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H330 Fatal if inhaled.

H315 Causes skin irritation.

H411 Toxic to aquatic life with long lasting effects.

H360D May damage the unborn child.

H301 Toxic if swallowed.

H372 Causes damage to organs through prolonged or repeated exposure.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

EUH071 Corrosive to the respiratory tract.

H310 Fatal in contact with skin.

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Hazard class and hazard category	Code	Description
Acute Tox. 2	3.1/2/Dermal	Acute toxicity (dermal), Category 2
Acute Tox. 2	3.1/2/Inhal	Acute toxicity (inhalation), Category 2
Acute Tox. 3	3.1/3/Dermal	Acute toxicity (dermal), Category 3
Acute Tox. 3	3.1/3/Inhal	Acute toxicity (inhalation), Category 3
Acute Tox. 3	3.1/3/Oral	Acute toxicity (oral), Category 3
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Skin Corr. 1	3.2/1	Skin corrosion, Category 1
Skin Corr. 1C	3.2/1C	Skin corrosion, Category 1C
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Dam. 1	3.3/1	Serious eye damage, Category 1
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1
Skin Sens. 1A	3.4.2/1A	Skin Sensitisation, Category 1A
Skin Sens. 1B	3.4.2/1B	Skin Sensitisation, Category 1B
Repr. 1B	3.7/1B	Reproductive toxicity, Category 1B
STOT RE 1	3.9/1	Specific target organ toxicity - repeated exposure, Category 1
Aquatic Acute 1	4.1/A1	Acute aquatic hazard, category 1
Aquatic Chronic 1	4.1/C1	Chronic (long term) aquatic hazard, category 1
Aquatic Chronic 2	4.1/C2	Chronic (long term) aquatic hazard, category 2
Aquatic Chronic 3	4.1/C3	Chronic (long term) aquatic hazard, category 3

This safety data sheet has been completely updated in compliance to Regulation 2020/878. Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Aquatic Chronic 3, H412	Calculation method

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

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SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE:	Acute Toxicity Estimate
ATEmix:	Acute toxicity Estimate (Mixtures)
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.