SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2015/830

NOVALUBE

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

1.1. Product identifier

Product name : NOVALUBE
Registration number REACH : Not applicable (mixture)
Product type REACH : Mixture

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

1.2.1 Relevant identified uses

Lubricating grease

1.2.2 Uses advised against

No uses advised against

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

Novatio*
Industrielaan 5B
B-2250 Olen
☎ +32 14 25 76 40
🖷 +32 14 22 02 66
info@novatio.be
*NOVATIO is a registered trademark of Novatech International N.V.

Manufacturer of the product

Novatech International N.V.
Industrielaan 5B
B-2250 Olen
☎ +32 14 85 97 37
🖷 +32 14 85 97 38
info@tec7.be

1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch):
+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Eye Dam.	category 1	H318: Causes serious eye damage.
Aquatic Acute	category 1	H400: Very toxic to aquatic life.
Aquatic Chronic	category 2	H411: Toxic to aquatic life with long lasting effects.

2.2. Label elements

Contains: calciumdihydroxide; zinc oxide.

Signal word Danger

H-statements

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

P-statements

P280 Wear eye protection
P273 Avoid release to the environment.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.

P391 Collect spillage.

2.3. Other hazards

No other hazards known

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark
calciumdihydroxide 01-2119475151-45	1305-62-0 215-137-3	C<9.99 %	Eye Dam. 1; H318 Skin Irrit. 2; H315 STOT SE 3; H335	(1)(2)	Constituent
zinc oxide 01-2119463881-32	1314-13-2 215-222-5	C<3.5 %	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(2)	Constituent
aluminium powder (stabilised) 01-2119529243-45	7429-90-5 231-072-3	2.5%<C<5%	Flam. Sol. 1; H228 Water-react. 2; H261	(1)(2)(10)	Constituent
copper	7440-50-8 231-159-6	2.5%<C<5%	Acute Tox. 4; H302 Aquatic Acute 1; H400 Aquatic Chronic 2; H411	(1)(2)(9)	Constituent
talc	14807-96-6 238-877-9			(2)	Constituent

(1) For H-statements in full: see heading 16
(2) Substance with a Community workplace exposure limit
(9) M-factor, see heading 16
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

SECTION 4: First aid measures

4.1. Description of first aid measures

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.

After eye contact:

Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

After ingestion:

Rinse mouth with water. Consult a doctor/medical service if you feel unwell.

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

4.2.1 Acute symptoms

After inhalation:

No effects known.

After skin contact:

No effects known.

After eye contact:

Corrosion of the eye tissue.

After ingestion:

No effects known.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:

Small fire: Quick-acting ABC powder extinguisher, Quick-acting BC powder extinguisher, Quick-acting class B foam extinguisher, Quick-acting CO2 extinguisher.

Major fire: Class B foam (not alcohol-resistant).

5.1.2 Unsuitable extinguishing media:

Small fire: Water (quick-acting extinguisher, reel); risk of puddle expansion.

Major fire: Water; risk of puddle expansion.

5.2. Special hazards arising from the substance or mixture

Upon combustion CO and CO2 are formed and formation of metallic fumes.

5.3. Advice for firefighters

5.3.1 Instructions:

Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Safety glasses. Protective clothing. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No naked flames.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Safety glasses. Protective clothing.

Suitable protective clothing

See heading 8.2

6.2. Environmental precautions

Contain released product. Dam up the solid spill. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1. Precautions for safe handling

Keep away from naked flames/heat. Observe normal hygiene standards. Do not discharge the waste into the drain. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Store in a dry area. Keep only in the original container. Store at room temperature. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, oxidizing agents, (strong) acids.

7.2.3 Suitable packaging material:

No data available

7.2.4 Non suitable packaging material:

No data available

7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

EU

Calcium dihydroxide	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	1 mg/m³
	Short time value (Indicative occupational exposure limit value)	4 mg/m³

Belgium

Aluminium (métal et composés insolubles, fraction alvéolaire)	Time-weighted average exposure limit 8 h	1 mg/m³
Calcium (hydroxyde de)	Time-weighted average exposure limit 8 h	5 mg/m³
Cuivre (fumées) (en Cu)	Time-weighted average exposure limit 8 h	0.2 mg/m³
Cuivre (poussières et brouillards de) (en Cu)	Time-weighted average exposure limit 8 h	1 mg/m³
Talc (sans fibre d'amiante)	Time-weighted average exposure limit 8 h	2 mg/m³
Zinc (oxyde de) (fumées)	Time-weighted average exposure limit 8 h	2 mg/m³
	Short time value	10 mg/m³

The Netherlands

Calciumdihydroxide	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	5 mg/m³
Koper en anorganische koperverbindingen (inhaleerbaar)	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.1 mg/m³
Talk (respirabel)	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.25 mg/m³

France

Aluminium (métal)	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	10 mg/m³
Aluminium (pulvérulent)	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	5 mg/m³
Calcium (hydroxyde de)	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	5 mg/m³
Cuivre (fumées)	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	0.2 mg/m³
Cuivre (poussières), en Cu	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	1 mg/m³
	Short time value (VL: Valeur non réglementaire indicative)	2 mg/m³
Zinc (oxyde de, fumées)	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	5 mg/m³
Zinc (oxyde de, poussières)	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	10 mg/m³

Germany

Calciumdihydroxid	Time-weighted average exposure limit 8 h (TRGS 900)	1 mg/m³

UK

Aluminium metal inhalable dust	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	10 mg/m³
Aluminium metal respirable dust	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	4 mg/m³
Calcium hydroxide	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	5 mg/m³
Copper and compounds: dusts and mists (as Cu)	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	1 mg/m³
	Short time value (Workplace exposure limit (EH40/2005))	2 mg/m³
Copper fume	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	0.2 mg/m³
Talc, respirable dust	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	1 mg/m³

USA (TLV-ACGIH)

Aluminium, Metal	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	1 mg/m³ (R)
Calcium hydroxide	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	5 mg/m³
Copper fume	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.2 mg/m³
Copper dust & mists, as Cu	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	1 mg/m³
Talc (containing asbestos fibers)	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.1 fibers/cm³ (F)
Talc (containing no asbestos fibers)	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	2 mg/m³ (R,E)
Zinc oxide	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	2 mg/m³ (R)
	Short time value (TLV - Adopted Value)	10 mg/m³ (R)

(R): Respirable fraction
(F): Respirable fibers: length > 5 µm; aspect ratio ≥ 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination
R,E: Respirable fraction. The value is for particulate matter containing no asbestos and < 1% crystalline silica

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

Product name	Test	Number
Aluminium	NIOSH	7013
Aluminum (Al)	NIOSH	7302
Aluminum (Al)	NIOSH	7304

Product name	Test	Number
Aluminum (Al)	NIOSH	7306
Aluminum (Al)	NIOSH	8310
Aluminum (Elements)	NIOSH	7300
Aluminum (Elements, aqua regia ashing)	NIOSH	7301
Aluminum (Elements, hot block/HCl/HNO3 digestion)	NIOSH	7303
Aluminum	OSHA	ID121
Calciumdihydroxide	NIOSH	7020
Copper (Cu)	NIOSH	7302
Copper (Cu)	NIOSH	7304
Copper (Cu)	NIOSH	7306
Copper (Cu)	NIOSH	8005
Copper (Cu)	NIOSH	8310
Copper (Elements on wipes)	NIOSH	9102
Copper (Elements)	NIOSH	7300
Copper (Elements, aqua regia ashing)	NIOSH	7301
Copper (Elements, hot block/HCl/HNO3 digestion)	NIOSH	7303
Copper Dust and fume	NIOSH	7029
Copper	OSHA	1006
Copper	OSHA	ID 105
Copper	OSHA	ID 121
Copper	OSHA	ID 125G
Copper	OSHA	ID 206
Zinc (Elements)	NIOSH	7300
Zinc (Zn)	NIOSH	7302
Zinc (Zn)	NIOSH	7304
Zinc Oxide	NIOSH	7030
Zinc Oxide	NIOSH	7502
Zinc Oxide	OSHA	ID 121
Zinc Oxide	OSHA	ID 143

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL/DMEL - Workers

calciumdihydroxide

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	1 mg/m³	
	Acute local effects inhalation	4 mg/m³	

zinc oxide

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	5 mg/m³	
	Long-term local effects inhalation	0.5 mg/m³	
	Long-term systemic effects dermal	83 mg/kg bw/day	

aluminium powder (stabilised)

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	3.72 mg/m³	

copper

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects dermal	137 mg/kg bw/day	
	Acute systemic effects dermal	273 mg/m³	

DNEL/DMEL - General population

calciumdihydroxide

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	1 mg/m³	
	Acute local effects inhalation	4 mg/m³	

zinc oxide

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	2.5 mg/m³	
	Long-term systemic effects dermal	83 mg/kg bw/day	
	Long-term systemic effects oral	0.83 mg/kg bw/day	

aluminium powder (stabilised)

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	3.95 mg/m³	

copper

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects dermal	137 mg/kg bw/day	
	Acute systemic effects dermal	273 mg/kg bw/day	
	Long-term systemic effects oral	0.041 mg/kg bw/day	

PNEC

calciumdihydroxide

Compartments	Value	Remark
Fresh water	0.49 mg/l	
Marine water	0.32 mg/l	
Aqua (intermittent releases)	0.49 mg/l	
STP	3 mg/l	
Soil	1080 mg/kg soil dw	

zinc oxide

Compartments	Value	Remark
Fresh water	20.6 µg/l	
Marine water	6.1 µg/l	
STP	100 µg/l	
Fresh water sediment	117.8 mg/kg sediment dw	
Marine water sediment	56.5 mg/kg sediment dw	
Soil	35.6 mg/kg soil dw	

aluminium powder (stabilised)

Compartments	Value	Remark
STP	20 mg/l	

copper

Compartments	Value	Remark
Fresh water	7.8 µg/l	
Salt water	5.2 µg/l	
STP	230 µg/l	
Fresh water sediment	87 mg/kg sediment dw	
Marine water sediment	676 mg/kg sediment dw	
Soil	65 mg/kg soil dw	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Observe normal hygiene standards. Do not eat, drink or smoke during work.

a) Respiratory protection:

Respiratory protection not required in normal conditions.

b) Hand protection:

Protective gloves against chemicals (EN374).

Materials	Measured breakthrough time	Thickness	Protection index
nitrile rubber	> 480 minutes	0.4 mm	Class 6

- materials (excellent resistance)

Nitrile rubber.

- materials (poor resistance)

Leather.

c) Eye protection:

Safety glasses.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Paste
Odour	Characteristic odour
Odour threshold	No data available
Colour	Grey
Particle size	No data available
Explosion limits	No data available
Flammability	Non-flammable
Log Kow	Not applicable (mixture)
Dynamic viscosity	No data available
Kinematic viscosity	No data available

Melting point	No data available
Boiling point	No data available
Evaporation rate	No data available
Relative vapour density	Not applicable
Vapour pressure	No data available
Solubility	Water ; insoluble
Relative density	1.2
Decomposition temperature	No data available
Auto-ignition temperature	> 200 °C
Flash point	170 °C ; ISO 2592 ; Solid
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	No data available

9.2. Other information

Absolute density	1200 kg/m³

SECTION 10: Stability and reactivity

10.1. Reactivity

Temperature above flashpoint: higher fire/explosion hazard.

10.2. Chemical stability

No data available.

10.3. Possibility of hazardous reactions

Reacts with (some) acids/bases and with (strong) oxidizers.

10.4. Conditions to avoid

Precautionary measures

Keep away from naked flames/heat.

10.5. Incompatible materials

Oxidizing agents, (strong) acids.

10.6. Hazardous decomposition products

Upon combustion CO and CO2 are formed and formation of metallic fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

11.1.1 Test results

Acute toxicity

NOVALUBE

No (test)data on the mixture available

Judgement is based on the relevant ingredients

calciumdihydroxide

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 425	> 2000 mg/kg bw		Rat (female)	Experimental value	
Dermal	LD50	OECD 402	> 2500 mg/kg bw	24 h	Rabbit (male/female)	Experimental value	

zinc oxide

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	> 5000 mg/kg		Rat (male/female)	Experimental value	
Dermal	LD50	OECD 402	> 2000 mg/kg bw	24 h	Rat (male/female)	Experimental value	
Inhalation (dust)	LC50	Equivalent to OECD 403	> 5.7 mg/l	4 h	Rat (male/female)	Experimental value	

aluminium powder (stabilised)

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	> 15900 mg/kg bw		Rat (male/female)	Read-across	
Inhalation (aerosol)	LC50	Equivalent to OECD 403	> 888 mg/m³	4 h	Rat (male/female)	Experimental value	

copper

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 401	482 mg/kg bw		Rat (male/female)	Experimental value	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

NOVALUBE

No (test)data on the mixture available

Classification is based on the relevant ingredients

calciumdihydroxide

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating	OECD 405	4 h	1; 24; 48; 72 hours	Rabbit	Experimental value	
Skin	Irritating	OECD 404	4 h	1; 24; 48; 72 hours	Rabbit	Experimental value	

zinc oxide

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405	24 h	24; 72 hours	Rabbit	Experimental value	
Skin	Not irritating	OECD 404	24 h	24 hours	Rabbit	Experimental value	
Not applicable (in vitro test)	Not corrosive	OECD 431	3 minutes	24; 72 hours	Reconstructed human epidermis	Experimental value	

aluminium powder (stabilised)

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	Other		24; 48; 72 hours	Rabbit	Read-across	
Skin	Not irritating	Equivalent to OECD 404	24 h	24; 48; 72 hours	Rabbit	Read-across	

Conclusion

Causes serious eye damage.

Not classified as irritating to the skin

Respiratory or skin sensitisation

NOVALUBE

No (test)data on the mixture available

Judgement is based on the relevant ingredients

zinc oxide

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	OECD 406			Guinea pig (female)	Experimental value	
Skin	Not sensitizing	Human observation	2 days (continuous)	72 hours	Human	Experimental value	

aluminium powder (stabilised)

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	Other		24 hours	Guinea pig (male)	Read-across	
Intratracheal instillation	Not sensitizing				Mouse (male)	Read-across	

Conclusion

Not classified as sensitizing for skin

Specific target organ toxicity

NOVALUBE

No (test)data on the mixture available

Judgement is based on the relevant ingredients

zinc oxide

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (diet)	NOEL	OECD 408	3000 ppm		No effect	13 weeks (daily)	Rat (male/female)	Read-across
Inhalation (aerosol)	NOAEL	OECD 413	1.5 mg/m³ air		No effect	13 weeks (6h/day, 5 days/week)	Rat (male)	Experimental value

aluminium powder (stabilised)

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (drinking water)	NOAEL	Equivalent to OECD 452	30 mg/kg bw/day	General	No effect		Rat (male/female)	Read-across
Oral (drinking water)	LOAEL	Equivalent to OECD 452	100 mg/kg bw/day	General	Myasthenia	15 day(s)	Rat (male/female)	Read-across
Inhalation (dust)	LOAEC	Equivalent to OECD 413	50 mg/m³ air	Lungs	Lung tissue affection/degeneration	25 weeks (6h/day, 5 days/week) - 52 weeks (6h/day, 5 days/week)	Rat	Experimental value

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

NOVALUBE

No (test)data on the mixture available

calciumdihydroxide

Result	Method	Test substrate	Effect	Value determination
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)		Experimental value

zinc oxide

Result	Method	Test substrate	Effect	Value determination
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value

aluminium powder (stabilised)

Result	Method	Test substrate	Effect	Value determination
Positive without metabolic activation	Equivalent to OECD 473	Human lymphocytes		Read-across
Negative	OECD 476	Mouse (lymphoma L5178Y cells)	No effect	Read-across

Mutagenicity (in vivo)

NOVALUBE

No (test)data on the mixture available

Judgement is based on the relevant ingredients

zinc oxide

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	OECD 474		Mouse (male)	Bone marrow	Experimental value

aluminium powder (stabilised)

Result	Method	Exposure time	Test substrate	Organ	Value determination
Positive	OECD 474		Rat (female)	Bone marrow	Read-across

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

NOVALUBE

No (test)data on the mixture available

Judgement is based on the relevant ingredients

aluminium powder (stabilised)

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation (dust)	LOAEC	OECD 413	100 mg/m³ air	25 weeks (6h/day, 5 days/week) - 52 weeks (6h/day, 5 days/week)	Rat	Lung tissue affection/degeneration	Lungs	Experimental value

Conclusion

Not classified for carcinogenicity

Reproductive toxicity

NOVALUBE

No (test)data on the mixture available

Judgement is based on the relevant ingredients

zinc oxide

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEC	OECD 414	7.5 mg/kg bw/day	14 days (6h/day)	Rat	No effect	Foetus	Experimental value
Maternal toxicity	NOAEC	OECD 414	7.5 mg/kg bw/day	14 days (6h/day)	Rat	No effect		Experimental value
Effects on fertility	NOAEL (F1)	Equivalent to OECD 416	7.5 mg/kg bw/day	22 weeks (daily)	Rat (male/female)	No effect		Read-across

aluminium powder (stabilised)

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	Equivalent to OECD 414	266 mg/kg bw/day	10 day(s)	Rat	No effect	Foetus	Read-across
Effects on fertility	NOAEL	OECD 422	1000 mg/kg bw/day	28 day(s) - 53 day(s)	Rat (male/female)	No effect		Read-across

Conclusion

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

NOVALUBE

No (test)data on the mixture available

Chronic effects from short and long-term exposure

NOVALUBE

No effects known.

SECTION 12: Ecological information

12.1. Toxicity

NOVALUBE

No (test)data on the mixture available

Classification is based on the relevant ingredients

calciumdihydroxide

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	50.6 mg/l	96 h	Oncorhynchus mykiss	Static system	Fresh water	Experimental value; GLP
Acute toxicity crustacea	EC50	OECD 202	49.1 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; GLP
Toxicity algae and other aquatic plants	EC50	OECD 201	184.57 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP
Long-term toxicity aquatic crustacea	NOEC		32 mg/l	14 day(s)	Crangon sp.	Semi-static system	Salt water	Experimental value; Growth
Toxicity aquatic micro-organisms	EC50	OECD 209	300.4 mg/l	3 h	Activated sludge	Static system	Fresh water	Experimental value; GLP

zinc oxide

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	ASTM E729-88	0.169 mg/l	96 h	Oncorhynchus mykiss	Static system	Fresh water	Read-across; Zinc ion
Acute toxicity crustacea	EC50	OECD 202	1 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Zinc ion
Toxicity algae and other aquatic plants	IC50	OECD 201	0.136 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Zinc ion
	NOEC	OECD 201	0.024 mg/l	3 day(s)	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Zinc ion
Long-term toxicity fish	NOEC	OECD 215	0.039 mg/l	30 day(s)	Oncorhynchus mykiss	Flow-through system	Fresh water	Read-across; Zinc ion
Long-term toxicity aquatic crustacea	NOEC	OECD 211	0.04 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Read-across; Zinc ion
Toxicity aquatic micro-organisms	EC50	OECD 209	> 1000 mg/l	3 h	Activated sludge	Static system	Fresh water	Experimental value; GLP

aluminium powder (stabilised)

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	ASTM	> 218.64 mg/l	96 h	Pimephales promelas	Semi-static system	Fresh water	Weight of evidence; GLP

copper

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		68 µg/l - 94 µg/l	96 h	Oncorhynchus mykiss	Flow-through system	Fresh water	Weight of evidence
Long-term toxicity fish	NOEC		11.4 µg/l	45 day(s)	Oncorhynchus mykiss	Flow-through system	Fresh water	Experimental value

talc

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		> 100 g/l	24 h	Brachydanio rerio	Semi-static system		

Conclusion

Very toxic to aquatic life.
Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

No test data of component(s) available

12.3. Bioaccumulative potential

NOVALUBE

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

calciumdihydroxide

Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

zinc oxide

Log Kow

Method	Remark	Value	Temperature	Value determination
		1.53		Estimated value

aluminium powder (stabilised)

Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

copper

Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

Conclusion

Does not contain bioaccumulative component(s)

12.4. Mobility in soil

zinc oxide

(log) Koc

Parameter	Method	Value	Value determination
log Koc		2.2	Literature study

Conclusion

Contains component(s) that adsorb(s) into the soil
Contains component(s) with potential for mobility in the soil

12.5. Results of PBT and vPvB assessment

Does not contain component(s) that meet(s) the criteria of PBT and/or vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006.

12.6. Other adverse effects

NOVALUBE

Fluorinated greenhouse gases (Regulation (EU) No 517/2014)

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

calciumdihydroxide

Groundwater

Groundwater pollutant

zinc oxide

Groundwater

Groundwater pollutant

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).
12 01 12* (wastes from shaping and physical and mechanical surface treatment of metals and plastics: spent waxes and fats). Depending on branch of industry and production process, also other waste codes may be applicable.

13.1.2 Disposal methods

Recycle/reuse. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into drains or the environment.

13.1.3 Packaging/Container

European Union

Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1. UN number

UN number	3077

14.2. UN proper shipping name

Proper shipping name	Environmentally hazardous substance, solid, n.o.s. (copper)

14.3. Transport hazard class(es)

Hazard identification number	90
Class	9
Classification code	M7

14.4. Packing group

Packing group	III
Labels	9

14.5. Environmental hazards

Environmentally hazardous substance mark	yes

14.6. Special precautions for user

Special provisions	274
Special provisions	335

Special provisions	375
Special provisions	601
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg. (gross mass)

Rail (RID)

14.1. UN number

UN number	3077

14.2. UN proper shipping name

Proper shipping name	Environmentally hazardous substance, solid, n.o.s. (copper)

14.3. Transport hazard class(es)

Hazard identification number	90
Class	9
Classification code	M7

14.4. Packing group

Packing group	III
Labels	9

14.5. Environmental hazards

Environmentally hazardous substance mark	yes

14.6. Special precautions for user

Special provisions	274
Special provisions	335
Special provisions	375
Special provisions	601
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg. (gross mass)

Inland waterways (ADN)

14.1. UN number

UN number	3077

14.2. UN proper shipping name

Proper shipping name	Environmentally hazardous substance, solid, n.o.s. (copper)

14.3. Transport hazard class(es)

Class	9
Classification code	M7

14.4. Packing group

Packing group	III
Labels	9

14.5. Environmental hazards

Environmentally hazardous substance mark	yes

14.6. Special precautions for user

Special provisions	274
Special provisions	335
Special provisions	375
Special provisions	601
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg. (gross mass)

Sea (IMDG/IMSBC)

14.1. UN number

UN number	3077

14.2. UN proper shipping name

Proper shipping name	Environmentally hazardous substance, solid, n.o.s. (copper)

14.3. Transport hazard class(es)

Class	9

14.4. Packing group

Packing group	III
Labels	9

14.5. Environmental hazards

Marine pollutant	P
Environmentally hazardous substance mark	yes

14.6. Special precautions for user

Special provisions	274
Special provisions	335
Special provisions	966
Special provisions	967
Special provisions	969
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg. (gross mass)

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Annex II of MARPOL 73/78	Not applicable

Air (ICAO-TI/IATA-DGR)

14.1. UN number

UN number	3077

14.2. UN proper shipping name

Proper shipping name	Environmentally hazardous substance, solid, n.o.s. (copper)

14.3. Transport hazard class(es)

Class	9

14.4. Packing group

Packing group	III
Labels	9

14.5. Environmental hazards

Environmentally hazardous substance mark	yes

14.6. Special precautions for user

Special provisions	A97
Special provisions	A158
Special provisions	A179
Special provisions	A197
Limited quantities: maximum net quantity per packaging	30 kg G

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
< 75 %	

European drinking water standards (Directive 98/83/EC)

aluminium powder (stabilised)

Parameter	Parametric value	Note	Reference
Aluminium	200 µg/l		Listed in Annex I, Part C, of Directive 98/83/EC on the quality of water intended for human consumption.

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
· aluminium powder (stabilised)	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to that Regulation or not.	1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following: — metallic glitter intended mainly for decoration, — artificial snow and frost, — “whoopee” cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs. 2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: “For professional users only”. 3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/ 324/EEC. 4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

National legislation Belgium

NOVALUBE

No data available

National legislation The Netherlands

NOVALUBE

Waterbezwaarlijkheid	A (2)

National legislation France

NOVALUBE

No data available

National legislation Germany

NOVALUBE

WGK	2; Classification water polluting based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 4) and Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) of 18 April 2017

calciumdihydroxide

TA-Luft	5.2.1
TRGS900 - Risiko der Fruchtschädigung	Calciumdihydroxid; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden

zinc oxide

TA-Luft	5.2.1

aluminium powder (stabilised)

TA-Luft	5.2.1

talc

TA-Luft	5.2.1

National legislation United Kingdom

NOVALUBE

No data available

Other relevant data

NOVALUBE

No data available

aluminium powder (stabilised)

TLV - Carcinogen	Aluminium, Metal; A4

talc

TLV - Carcinogen	Talc (containing no asbestos fibers); A4
	Talc (containing asbestos fibers); A1
IARC - classification	3; Talc

15.2. Chemical safety assessment

No chemical safety assessment has been conducted for the mixture.

SECTION 16: Other information

Full text of any H-statements referred to under heading 3:

H228 Flammable solid.
H261 In contact with water releases flammable gases.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.

(*)	INTERNAL CLASSIFICATION BY BIG
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
EC50	Effect Concentration 50 %
ErC50	EC50 in terms of reduction of growth rate
LC50	Lethal Concentration 50 %
LD50	Lethal Dose 50 %
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative & Toxic
PNEC	Predicted No Effect Concentration
STP	Sludge Treatment Process
vPvB	very Persistent & very Bioaccumulative

M-factor

zinc oxide	1	Acute	ECHA
zinc oxide	1	Chronic	ECHA
copper	10	Acute	ECHA

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption,

storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.