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Revision date / version: 29.03.2023 / 0004
Replacing version dated / version: 27.02.2023 / 0003
Valid from: 29.03.2023
PDF print date: 31.03.2023
METAFLUX 70-85 Gleitmetall-Paste

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

1.1 Product identifier

METAFLUX 70-85 Gleitmetall-Paste

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

Relevant identified uses of the substance or mixture:

Grease

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

GB

elumatec AG
Pinacher Straße 61
75417 Mühlacker
Tel.: +49 (0) 7041 / 14 – 0
Fax: +49 (0) 7041 / 14 – 280
Homepage: www.elumatec.com

elumatec UK Ltd
Unit 1 Integra
Thornton Chase
Linford Wood
Milton Keynes
MK14 6FD

Phone +44 1908 580 800
Fax +44 1908 580 830

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

1.4 Emergency telephone number

Emergency information services / official advisory body:

GB

Emergency poisoning centre D-79110 Freiburg Tel.: +49 (0) 761 19240 (24 hour)

Telephone number of the company in case of emergencies:

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (CLP)

Hazard class	Hazard category	Hazard statement
Aquatic Chronic	3	H412-Harmful to aquatic life with long lasting effects.

2.2 Label elements

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Labeling according to Regulation (EC) 1272/2008 (CLP)

H412-Harmful to aquatic life with long lasting effects.

P273-Avoid release to the environment.

EUH212-Warning! Hazardous respirable dust may be formed when used. Do not breathe dust.

2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

The mixture does not contain any substance with endocrine disrupting properties (< 0,1 %).

SECTION 3: Composition/information on ingredients

3.1 Substances

n.a.

3.2 Mixtures

Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm)	
Registration number (REACH)	---
Index	022-006-002
EINECS, ELINCS, NLP, REACH-IT List-No.	236-675-5
CAS	13463-67-7
content %	1-<10
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Carc. 2, H351 (as inhalation)
Zinc powder - zinc dust (stabilized)	
Registration number (REACH)	---
Index	030-001-01-9
EINECS, ELINCS, NLP, REACH-IT List-No.	231-175-3
CAS	7440-66-6
content %	1-<2,5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)
2,6-di-tert-butyl-p-cresol	
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	204-881-4
CAS	128-37-0
content %	0,1-<0,25
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.

The substances named in this section are given with their actual, appropriate classification!

For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aiders should ensure they are protected!
Never pour anything into the mouth of an unconscious person!

Inhalation

Remove person from danger area.
Supply person with fresh air and consult doctor according to symptoms.

Skin contact

Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

Eye contact

Remove contact lenses.
Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

Ingestion

Rinse the mouth thoroughly with water.
Do not induce vomiting. Consult doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.
In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Adapt to the nature and extent of fire.
Water jet spray/foam/CO2/dry extinguisher

Unsuitable extinguishing media

High volume water jet

5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:

Oxides of carbon
Oxides of sulphur
Metal oxides
Toxic gases

5.3 Advice for firefighters

For personal protective equipment see Section 8.
In case of fire and/or explosion do not breathe fumes.
Protective respirator with independent air supply.
According to size of fire
Full protection, if necessary.
Dispose of contaminated extinction water according to official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.
Ensure sufficient ventilation, remove sources of ignition.
Avoid dust formation with solid or powder products.
Leave the danger zone if possible, use existing emergency plans if necessary.
Ensure sufficient supply of air.
Avoid contact with eyes or skin.
If applicable, caution - risk of slipping.

6.1.2 For emergency responders

See section 8 for suitable protective equipment and material specifications.

6.2 Environmental precautions

If leakage occurs, dam up.

Resolve leaks if this possible without risk.

Prevent surface and ground-water infiltration, as well as ground penetration.

Prevent from entering drainage system.

If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth, sawdust) and dispose of according to Section 13.

Fill the absorbed material into lockable containers.

6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure good ventilation.

Avoid contact with eyes or skin.

Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.

Observe directions on label and instructions for use.

Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.

Store product closed and only in original packing.

Not to be stored in gangways or stair wells.

Store in a well-ventilated place.

Store in a dry place.

Store cool.

7.3 Specific end use(s)

No information available at present.

Observe the instructions for good working practice and the recommendations for risk assessment.

Consult hazardous substance information systems, e.g. from the professional associations, the chemical industry or different industries,

depending on the application (building materials, wood, chemistry, laboratory, leather, metal).

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Chemical Name	Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$)	
WEL-TWA: 10 mg/m ³ (total inhalable dust), 4 mg/m ³ (respirable dust)	WEL-STEL: ---	---
Monitoring procedures:	---	
BMGV: ---	Other information: ---	
Chemical Name	2,6-di-tert-butyl-p-cresol	
WEL-TWA: 10 mg/m ³	WEL-STEL: ---	---
Monitoring procedures:	---	
BMGV: ---	Other information: ---	
Chemical Name	Talc	

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WEL-TWA: 1 mg/m3 (res. dust)	WEL-STEL: ---	---
Monitoring procedures: ---		
BMGV: ---	Other information: ---	

Chemical Name	Aluminium powder (stabilised)	
WEL-TWA: 10 mg/m3 (total inh. dust), 4 mg/m3 (resp. dust)	WEL-STEL: ---	---
Monitoring procedures: ---		
BMGV: ---	Other information: ---	

Chemical Name	Molybdenum disulphide	
WEL-TWA: 10 mg/m3 (molybdenum insoluble compounds, as Mo)	WEL-STEL: 20 mg/m3 (molybdenum insoluble compounds, as Mo)	---
Monitoring procedures: ---		
BMGV: ---	Other information: ---	

Chemical Name	Graphite	
WEL-TWA: 10 mg/m3 (total inh. dust), 4 mg/m3 (res. dust)	WEL-STEL: ---	---
Monitoring procedures: ---		
BMGV: ---	Other information: ---	

Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm)						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,184	mg/l	
	Environment - marine		PNEC	0,0184	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	0,193	mg/l	
	Environment - sewage treatment plant		PNEC	100	mg/l	
	Environment - sediment, freshwater		PNEC	1000	mg/kg dw	
	Environment - sediment, marine		PNEC	100	mg/kg dw	
	Environment - soil		PNEC	100	mg/kg dw	
	Environment - oral (animal feed)		PNEC	1667	mg/kg feed	
Consumer	Human - oral	Long term, systemic effects	DNEL	700	mg/kg bw/d	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	10	mg/m3	

Zinc powder - zinc dust (stabilized)						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	20,6	µg/l	
	Environment - marine		PNEC	6,1	µg/l	
	Environment - sewage treatment plant		PNEC	52	µg/l	
	Environment - sediment, freshwater		PNEC	117,8	mg/kg dw	
	Environment - sediment, marine		PNEC	56,5	mg/kg	
	Environment - soil		PNEC	35,6	mg/kg	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,83	mg/kg bw/d	

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Consumer	Human - dermal	Long term, systemic effects	DNEL	83	mg/kg	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	2,5	mg/m3	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	5	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	83	mg/kg	

2,6-di-tert-butyl-p-cresol						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - soil		PNEC	1,04	mg/kg ww	
	Environment - sewage treatment plant		PNEC	0,017	mg/l	
	Environment - sediment		PNEC	1,29	mg/kg ww	
	Environment - marine		PNEC	0,02	µg/l	
	Environment - water, sporadic (intermittent) release		PNEC	1,99	µg/l	
	Environment - freshwater		PNEC	0,199	µg/l	
	Environment - oral (animal feed)		PNEC	16,67	mg/kg feed	
	Environment - soil		PNEC	0,054	mg/kg dw	
	Environment - sediment, freshwater		PNEC	0,458	mg/kg dw	
	Environment - sediment, marine		PNEC	0,046	mg/kg dw	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	0,435	mg/m3	
Consumer	Human - dermal	Long term, systemic effects	DNEL	0,25	mg/kg bw/d	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,25	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	1,76	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	0,5	mg/kg bw/day	

Aluminium powder (stabilised)						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,0749	mg/l	
	Environment - sewage treatment plant		PNEC	20	mg/l	
Consumer	Human - oral	Long term, systemic effects	DNEL	3,95	mg/kg	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	3,72	mg/m3	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	3,72	mg/m3	

WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany). (8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-

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minute reference period).

(8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.

** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.

(13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (14) = The substance can cause sensitisation of the skin (Directive 2004/37/CE).

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.

If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.

Applies only if maximum permissible exposure values are listed here.

Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.

These are specified by e.g. EN 14042.

EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:

Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:

Chemical resistant protective gloves (EN ISO 374).

Recommended

Protective nitrile gloves (EN ISO 374).

Minimum layer thickness in mm:

0,5

Permeation time (penetration time) in minutes:

> 30

The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.

The recommended maximum wearing time is 50% of breakthrough time.

Protective hand cream recommended.

Skin protection - Other:

Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:

Normally not necessary.

Thermal hazards:

Not applicable

Additional information on hand protection - No tests have been performed.

In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.

Selection of materials derived from glove manufacturer's indications.

Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.

Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.

In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.

The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

8.2.3 Environmental exposure controls

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No information available at present.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	Paste, solid.
Colour:	Grey
Odour:	Characteristic
Melting point/freezing point:	There is no information available on this parameter.
Boiling point or initial boiling point and boiling range:	There is no information available on this parameter.
Flammability:	Combustible.
Lower explosion limit:	Does not apply to solids.
Upper explosion limit:	Does not apply to solids.
Flash point:	Does not apply to solids.
Auto-ignition temperature:	Does not apply to solids.
Decomposition temperature:	There is no information available on this parameter.
pH:	Mixture is non-soluble (in water).
Kinematic viscosity:	Does not apply to solids.
Solubility:	Insoluble
Partition coefficient n-octanol/water (log value):	Does not apply to mixtures.
Vapour pressure:	<0,001 hPa (20°C)
Density and/or relative density:	1,09 g/cm ³ (20°C)
Relative vapour density:	Does not apply to solids.

9.2 Other information

Explosives:	Product is not explosive.
Oxidizing solids:	No
Evaporation rate:	n.a.

SECTION 10: Stability and reactivity

10.1 Reactivity

Not to be expected

10.2 Chemical stability

Stable with proper storage and handling.

10.3 Possibility of hazardous reactions

No dangerous reactions are known.

10.4 Conditions to avoid

None known

10.5 Incompatible materials

None known

10.6 Hazardous decomposition products

No decomposition when used as directed.

SECTION 11: Toxicological information

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

Possibly more information on health effects, see Section 2.1 (classification).

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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:						n.d.a.
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.

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Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.
Aspiration hazard:						n.d.a.
Symptoms:						n.d.a.

Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$)						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat	OECD 425 (Acute Oral Toxicity - Up-and-Down Procedure)	
Acute toxicity, by dermal route:	LD50	>5000	mg/kg	Rabbit		
Acute toxicity, by inhalation:	LC50	>6,8	mg/l/4h	Rat		
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Not irritant, Mechanical irritation possible.
Respiratory or skin sensitisation:				Mouse	OECD 429 (Skin Sensitisation - Local Lymph Node Assay)	Not sensitizing
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact)
Germ cell mutagenicity:				Mouse	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Germ cell mutagenicity:				Mammalian	OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:				Salmonella typhimurium	(Ames-Test)	Negative
Germ cell mutagenicity:					OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Reproductive toxicity (Developmental toxicity):				Rat	OECD 414 (Prenatal Developmental Toxicity Study)	No indications of such an effect.
Specific target organ toxicity - single exposure (STOT-SE):						Not irritant (respiratory tract).
Specific target organ toxicity - repeated exposure (STOT-RE), oral:	NOAEL	3500	mg/kg/d	Rat		(90d)
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEC	10	mg/m3	Rat		(90d)

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Symptoms:						mucous membrane irritation, coughing, respiratory distress, drying of the skin.
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Zinc powder - zinc dust (stabilized)						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2000	mg/kg	Rat		
Acute toxicity, by inhalation:	LC50	>5410	mg/m ³ /4 h	Rat		
Acute toxicity, by inhalation:	LC50	5,41	mg/l/4h	Rat		Dusts or mist
Symptoms:						respiratory distress, chest pain (thorax pain), fever, joint pain, heart/circulatory disorders, coughing, metal fume fever, muscle pains, mucous membrane irritation, chills, nausea and vomiting.

2,6-di-tert-butyl-p-cresol						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2930	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit	(Draize-Test)	Not irritant
Respiratory or skin sensitisation:				Human being		No (skin contact)
Germ cell mutagenicity:					(Ames-Test)	Negative
Germ cell mutagenicity:				Mouse	in vivo	Negative
Carcinogenicity:	NOAEL	247	mg/kg bw/d	Rat		Negative
Reproductive toxicity (Developmental toxicity):	NOAEL	100	mg/kg	Rat		
Reproductive toxicity (Effects on fertility):	NOAEL	500	mg/kg	Rat		
Specific target organ toxicity - repeated exposure (STOT-RE):	NOEL	25	mg/kg	Rat		(28 d)
Aspiration hazard:						No
Symptoms:						mucous membrane irritation

Talc						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat		

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Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rat		
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Skin corrosion/irritation:						Not irritant
Respiratory or skin sensitisation:						Not sensitising
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Carcinogenicity:						Negative
Reproductive toxicity:				Rat		Negative
Symptoms:						mucous membrane irritation

Aluminium powder (stabilised)

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	15900	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	Analogous conclusion
Acute toxicity, by inhalation:	LC50	>5	mg/l/4h	Rat		Dust, Mist
Skin corrosion/irritation:						Not irritant
Serious eye damage/irritation:						Not irritant
Respiratory or skin sensitisation:						No (skin contact)
Symptoms:						mucous membrane irritation

Molybdenum disulphide

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2000	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rat		
Skin corrosion/irritation:				Rabbit		Not irritant
Serious eye damage/irritation:				Rabbit		Mild irritant
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact)
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Symptoms:						mucous membrane irritation

Graphite

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2000	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by inhalation:	NOAEC	>2000	mg/m3/4 h	Rat	OECD 412 (Subacute Inhalation Toxicity - 28-Day Study)	
Acute toxicity, by inhalation:	LC50	>2000	mg/m3/4 h	Rat	OECD 403 (Acute Inhalation Toxicity)	Aerosol
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant

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Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Not irritant
Respiratory or skin sensitisation:				Mouse	OECD 429 (Skin Sensitisation - Local Lymph Node Assay)	Not sensitising
Germ cell mutagenicity:				Salmonella typhimurium	OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Reproductive toxicity:	NOAEL	813	mg/kg	Rat	OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Development Tox. Screening Test)	
Symptoms:						breathing difficulties

11.2. Information on other hazards

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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Endocrine disrupting properties:						Does not apply to mixtures.
Other information:						No other relevant information available on adverse effects on health.

SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

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Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to daphnia:							n.d.a.
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and degradability:							n.d.a.
12.3. Bioaccumulative potential:							n.d.a.
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT and vPvB assessment							n.d.a.
12.6. Endocrine disrupting properties:							Does not apply to mixtures.
12.7. Other adverse effects:							No information available on other adverse effects on the environment.

Titanium dioxide (in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$)

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
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12.1. Toxicity to fish:	LC50	96h	>100	mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	LC50	48h	>100	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	EC50	72h	16	mg/l	Pseudokirchneriella subcapitata	U.S. EPA-600/9-78-018	
12.2. Persistence and degradability:							Not relevant for inorganic substances.
12.3. Bioaccumulative potential:	BCF	42d	9,6				Not to be expected
12.3. Bioaccumulative potential:	BCF	14d	19-352				Oncorhynchus mykiss
12.4. Mobility in soil:							Negative
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:			>5000	mg/l	Escherichia coli		
Toxicity to bacteria:	LC0	24h	>10000	mg/l	Pseudomonas fluorescens		
Toxicity to annelids:	NOEC/NOEL		>1000	mg/kg	Eisenia foetida		
Water solubility:							Insoluble 20°C

Zinc powder - zinc dust (stabilized)

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	0,238-0,56	mg/l	Oncorhynchus mykiss		
12.1. Toxicity to daphnia:	EC50	48h	2,8	mg/l	Daphnia magna		

2,6-di-tert-butyl-p-cresol

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	NOEC/NOEL	42d	0,053	mg/l	Oryzias latipes	OECD 210 (Fish, Early-Life Stage Toxicity Test)	
12.1. Toxicity to fish:	LC50	96h	>0,57	mg/l	Brachydanio rerio	84/449/EEC C.1	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	0,023	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to daphnia:	EC50	48h	0,45	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	EC50	72h	>0,4	mg/l	Desmodesmus subspicatus	84/449/EEC C.3	
12.1. Toxicity to algae:	EC50	72h	0,5	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	NOEC/NOEL	72h	0,4	mg/l	Desmodesmus subspicatus	84/449/EEC C.3	

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12.2. Persistence and degradability:		28d	4,5	%		OECD 301 C (Ready Biodegradability - Modified MITI Test (I))	Not readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		5,1				High
12.3. Bioaccumulative potential:	BCF		330-1800		Cyprinus caprio	OECD 305 (Bioconcentration - Flow-Through Fish Test)	
12.3. Bioaccumulative potential:			230-2500		Cyprinus carpio	OECD 305 (Bioconcentration - Flow-Through Fish Test)	56d
12.4. Mobility in soil:	Log Koc		3,9-4,2				
12.4. Mobility in soil:	Koc		14750				
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC50	3h	>10000	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	
Other information:	Koc		14750				
Other information:	Log Koc		3,9-4,2				
Other information:	AOX						Does not contain any organically bound halogens which can contribute to the AOX value in waste water.
Water solubility:			0,00076	g/l			

Talc							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	100	g/l	Brachydanio rerio		
12.2. Persistence and degradability:							Not relevant for inorganic substances.
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Water solubility:			<0,1	%			

Aluminium powder (stabilised)							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.2. Persistence and degradability:							Not relevant for inorganic substances.
12.5. Results of PBT and vPvB assessment							Not relevant for inorganic substances.

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Molybdenum disulphide

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	609-681,4	mg/l	Pimephales promelas		Analogous conclusion(mg Mo/L)
12.1. Toxicity to fish:	LC50	96h	7600	mg/l	Oncorhynchus mykiss		Analogous conclusion(mg Mo/L)
12.1. Toxicity to fish:	LC50	96h	781-1339	mg/l	Oncorhynchus mykiss		Analogous conclusion(mg Mo/L)
12.1. Toxicity to daphnia:	LC50	48h	1680,4-1776,6	mg/l	Daphnia magna		Analogous conclusion(mg Mo/L)
12.1. Toxicity to daphnia:	LC50	48h	2729,4	mg/l	Daphnia magna		Analogous conclusion(mg Mo/L)
12.1. Toxicity to daphnia:	LC50	48h	2847,5	mg/l	Daphnia magna		Analogous conclusion(mg Mo/L)
12.1. Toxicity to daphnia:	LC50	48h	130,9	mg/l	Daphnia magna		Analogous conclusion(mg Mo/L)
12.1. Toxicity to daphnia:	LC50	48h	1005,5-1024,6	mg/l	Ceriodaphnia spec.		Analogous conclusion(mg Mo/L)
12.1. Toxicity to algae:	ErC50	72h	289,2-390,9	mg/l	Pseudokirchnerie lla subcapitata		Analogous conclusion(mg Mo/L)
12.2. Persistence and degradability:							Not relevant for inorganic substances.
12.3. Bioaccumulative potential:							Not relevant for inorganic substances.
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Water solubility:			<0,1	mg/l			@20°C

Graphite

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	>100	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EC50	48h	>100	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	IC50	72h	100	mg/l	Pseudokirchnerie lla subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:							Inorganic products cannot be eliminated from water through biological purification methods.

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Water solubility:							Insoluble
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SECTION 13: Disposal considerations

13.1 Waste treatment methods

For the substance / mixture / residual amounts

EC disposal code no.:

The waste codes are recommendations based on the scheduled use of this product.
 Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)

07 06 99 wastes not otherwise specified

Recommendation:

Sewage disposal shall be discouraged.

Pay attention to local and national official regulations.

E.g. suitable incineration plant.

E.g. dispose at suitable refuse site.

For contaminated packing material

Pay attention to local and national official regulations.

Empty container completely.

Uncontaminated packaging can be recycled.

Dispose of packaging that cannot be cleaned in the same manner as the substance.

SECTION 14: Transport information

General statements

Transport by road/by rail (ADR/RID)

14.1. UN number or ID number: Not applicable

14.2. UN proper shipping name:

Not applicable

14.3. Transport hazard class(es): Not applicable

14.4. Packing group: Not applicable

14.5. Environmental hazards: Not applicable

Tunnel restriction code: Not applicable

Classification code: Not applicable

LQ: Not applicable

Transport category: Not applicable

Transport by sea (IMDG-code)

14.1. UN number or ID number: Not applicable

14.2. UN proper shipping name:

Not applicable

14.3. Transport hazard class(es): Not applicable

14.4. Packing group: Not applicable

14.5. Environmental hazards: Not applicable

Marine Pollutant: Not applicable

EmS: Not applicable

Transport by air (IATA)

14.1. UN number or ID number: Not applicable

14.2. UN proper shipping name:

Not applicable

14.3. Transport hazard class(es): Not applicable

14.4. Packing group: Not applicable

14.5. Environmental hazards: Not applicable

14.6. Special precautions for user

Unless specified otherwise, general measures for safe transport must be followed.

14.7. Maritime transport in bulk according to IMO instruments

Non-dangerous material according to Transport Regulations.

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SECTION 15: Regulatory information

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

Observe restrictions:

This product is regulated by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

For exceptions see Regulation (EU) 2019/1148 and guidelines for the implementation of Regulation (EU) 2019/1148.

Comply with trade association/occupational health regulations.

National requirements/regulations on safety and health protection must be applied when using work equipment.

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections:

1

These details refer to the product as it is delivered.

Employee instruction/training in handling hazardous materials is required.

Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

Classification in accordance with regulation (EC) No. 1272/2008 (CLP)	Evaluation method used
Aquatic Chronic 3, H412	Classification according to calculation procedure.

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

H351 Suspected of causing cancer by inhalation.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Aquatic Chronic — Hazardous to the aquatic environment - chronic

Carc. — Carcinogenicity

Aquatic Acute — Hazardous to the aquatic environment - acute

Key literature references and sources for data:

Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP) as amended.

Guidelines for the preparation of safety data sheets as amended (ECHA).

Guidelines on labelling and packaging according to the Regulation (EG) Nr. 1272/2008 (CLP) as amended (ECHA).

Safety data sheets for the constituent substances.

ECHA Homepage - Information about chemicals.

GESTIS Substance Database (Germany).

German Environment Agency "Rigoletto" information site on substances that are hazardous to water (Germany).

EU Occupation Exposure Limits Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164, (EU) 2019/1831, each as amended.

National Lists of Occupational Exposure Limits for each country as amended.

Regulations on the transport of hazardous goods by road, rail, sea and air (ADR, RID, IMDG, IATA) as amended.

Any abbreviations and acronyms used in this document:

acc., acc. to according, according to

ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)

AOX Adsorbable organic halogen compounds

approx. approximately

Art., Art. no. Article number

ASTM ASTM International (American Society for Testing and Materials)

ATE Acute Toxicity Estimate

BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)

BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)

BCF Bioconcentration factor

BSEF The International Bromine Council

bw body weight

CAS Chemical Abstracts Service

CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)

CMR carcinogenic, mutagenic, reproductive toxic

DMEL Derived Minimum Effect Level

DNEL Derived No Effect Level

DOC Dissolved organic carbon

dw dry weight

e.g. for example (abbreviation of Latin 'exempli gratia'), for instance

EbCx, EyCx, EbLx (x = 10, 50) Effect Concentration/Level of x % on reduction of the biomass (algae, plants)

EC European Community

ECHA European Chemicals Agency

ECx, ELx (x = 0, 3, 5, 10, 20, 50, 80, 100) Effect Concentration/Level for x % effect

EEC European Economic Community

EINECS European Inventory of Existing Commercial Chemical Substances

ELINCS European List of Notified Chemical Substances

EN European Norms

EPA United States Environmental Protection Agency (United States of America)

ErCx, EµCx, ErLx (x = 10, 50) Effect Concentration/Level of x % on inhibition of the growth rate (algae, plants)

etc. et cetera

EU European Union

EVAL Ethylene-vinyl alcohol copolymer

Fax. Fax number

gen. general

GHS Globally Harmonized System of Classification and Labelling of Chemicals

GWP Global warming potential

Koc Adsorption coefficient of organic carbon in the soil

Kow octanol-water partition coefficient

IARC International Agency for Research on Cancer

IATA International Air Transport Association

IBC (Code) International Bulk Chemical (Code)

IMDG-code International Maritime Code for Dangerous Goods

incl. including, inclusive

IUCLID International Uniform Chemical Information Database

IUPAC International Union for Pure Applied Chemistry

LC50 Lethal Concentration to 50 % of a test population

LD50 Lethal Dose to 50% of a test population (Median Lethal Dose)

Log Koc Logarithm of adsorption coefficient of organic carbon in the soil

Log Kow, Log Pow Logarithm of octanol-water partition coefficient

LQ Limited Quantities

MARPOL International Convention for the Prevention of Marine Pollution from Ships

n.a. not applicable

n.av. not available

n.c. not checked

n.d.a. no data available

NIOSH National Institute for Occupational Safety and Health (USA)

NLP No-longer-Polymer

NOEC, NOEL No Observed Effect Concentration/Level

OECD Organisation for Economic Co-operation and Development

org. organic

OSHA Occupational Safety and Health Administration (USA)

PBT persistent, bioaccumulative and toxic

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PE Polyethylene

PNEC Predicted No Effect Concentration

ppm parts per million

PVC Polyvinylchloride

REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)

REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.

RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)

SVHC Substances of Very High Concern

Tel. Telephone

TOC Total organic carbon

UN RTDG United Nations Recommendations on the Transport of Dangerous Goods

VOC Volatile organic compounds

vPvB very persistent and very bioaccumulative

wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.

No responsibility.

These statements were made by:

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