SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2020/878

sodium metasilicate, pentahydrate

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

1.1. Product identifier

Product name	: sodium metasilicate, pentahydrate
Synonyms	: disodium metasilicate, pentahydrate
Registration number REACH	: 01-2119449811-37 Registered with CAS No of the anhydrous form
Product type REACH	: Substance/mono-constituent
CAS number	: 10213-79-3
EC index number	: 014-010-00-8
EC number	: 229-912-9
Molecular mass	: 212.14 g/mol
Formula	: Na2SiO3.5H2O

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

1.2.1 Relevant identified uses

Industrial use
Professional use
Consumer use

1.2.2 Uses advised against

No uses advised against known

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

SILMACO nv
Industrieweg 90
B-3620 Lanaken
☎ +32 89 73 02 22
🖷 +32 89 72 27 24
info@silmaco.com

1.4. Emergency telephone number

During business hours, 8:00-17:00 (CET) :
+32 89 73 02 22
24h/24h :
België/Belgique - Antigifcentrum/Centre Antipoisons: +32 70 245 245 Belgien - Giftinformationszentrum: +32 70 245 245

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
Met. Corr.	category 1	H290: May be corrosive to metals.
Skin Corr.	category 1B	H314: Causes severe skin burns and eye damage.
Eye Dam.	category 1	H318: Causes serious eye damage.
STOT SE	category 3	H335: May cause respiratory irritation.

2.2. Label elements


Signal word Danger

H-statements

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.

P-statements

P261	Avoid breathing dust.
P262	Do not get in eyes, on skin, or on clothing.
P280	Wear protective gloves, protective clothing and eye protection/face protection.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P406	Store in corrosion-resistant container or in container with a resistant inner liner.

2.3. Other hazards

The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances

SECTION 3: Composition/information on ingredients

3.1. Substances

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark	M-factors and ATE
disodium metasilicate, pentahydrate 01-2119449811-37	10213-79-3 229-912-9	C>99%	Met. Corr. 1; H290 Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT SE 3; H335	(1)(6)(10)	Mono-constituent	

(1) For H- and EUH-statements in full: see section 16
(6) Enumerated in Annex VI of Regulation (EC) No. 1272/2008 but the classification has been adapted after evaluation of available test data
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

General:
Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the European emergency number 112. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.

After inhalation:
Remove victim into fresh air. Immediately consult a doctor/medical service.

After skin contact:
If possible, wipe up/dry remove chemical. Then rinse/shower immediately for 30 minutes with (lukewarm) water. Cut clothing; never remove burnt clothing from the wound. Do not give any pain medication. Consult a doctor/medical service.

After eye contact:
Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a doctor/medical service.

After ingestion:
Rinse mouth with water. Immediately consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

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

4.2.1 Acute symptoms

After inhalation:
EXPOSURE TO HIGH CONCENTRATIONS: AFTER INHALATION OF DUST: FOLLOWING SYMPTOMS MAY APPEAR LATER: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Coughing. Dry/sore throat. Corrosion of the upper respiratory tract. Possible inflammation of the respiratory tract. Possible laryngeal spasm/oedema.

After skin contact:
Caustic burns/corrosion of the skin.

After eye contact:
Corrosion of the eye tissue.

After ingestion:
Nausea. Diarrhoea. Abdominal pain. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. Shock. Blood in vomit.

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:
Adapt extinguishing media to the environment for surrounding fires.

5.1.2 Unsuitable extinguishing media:
Not applicable.

5.2. Special hazards arising from the substance or mixture

Hydrolyzes on exposure to water and heat. Reacts on exposure to water (moisture) with (some) metals: release of highly flammable gases/vapours (hydrogen).

5.3. Advice for firefighters

5.3.1 Instructions:
Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:
Gloves (EN 374). Face shield (EN 166). Corrosion-proof suit (EN 14605). Dust cloud production: self-contained breathing apparatus (EN 136 + EN 137). Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Prevent dust cloud formation. No naked flames. Corrosion-proof appliances.

6.1.1 Protective equipment for non-emergency personnel
See section 8.2

6.1.2 Protective equipment for emergency responders
Gloves (EN 374). Face shield (EN 166). Corrosion-proof suit (EN 14605). Dust cloud production: self-contained breathing apparatus (EN 136 + EN 137).

Suitable protective clothing
See section 8.2

6.2. Environmental precautions

Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

Stop dust cloud by humidifying. Prevent dust cloud formation. 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 section 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

Avoid raising dust. Keep away from naked flames/heat. Observe strict hygiene. Remove contaminated clothing immediately. Keep container tightly closed. Do not discharge the waste into the drain.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:
Meet the legal requirements. Store in a dry area.

7.2.2 Keep away from:
Heat sources, (strong) acids, oxidizing agents, halogens, metals, water/moisture.

7.2.3 Suitable packaging material:
Polyethylene, polypropylene, stainless steel.

7.2.4 Non suitable packaging material:
Metal, aluminium, zinc, tin, copper.

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.

b) National biological limit values
If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods
If applicable and available it will be listed below.

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 Threshold values

DNEL/DMEL - Workers
sodium metasilicate, pentahydrate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	6.22 mg/m³	
	Long-term systemic effects dermal	1.49 mg/kg bw/day	

DNEL/DMEL - General population

sodium metasilicate, pentahydrate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	1.55 mg/m³	
	Long-term systemic effects dermal	0.74 mg/kg bw/day	
	Long-term systemic effects oral	0.74 mg/kg bw/day	

PNEC

sodium metasilicate, pentahydrate

Compartments	Value	Remark
Fresh water	7.5 mg/l	
Marine water	1 mg/l	
Fresh water (intermittent releases)	7.5 mg/l	
STP	1000 mg/l	

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

Avoid raising dust. 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 strict hygiene. Do not eat, drink or smoke during work.

a) Respiratory protection:

Dust production: dust mask with filter type P3. High dust production: self-contained breathing apparatus (EN 136 + EN 137).

b) Hand protection:

Protective gloves against chemicals (EN 374).

Materials	Remark
butyl rubber	Excellent resistance
chlorosulfonated polyethylene	Excellent resistance
natural rubber	Excellent resistance
nitrile rubber	Excellent resistance
PVC	Excellent resistance
styrene-butadiene rubber	Excellent resistance
nitrile rubber/PVC	Excellent resistance
neoprene (chloroprene rubber)	Good resistance
chlorinated polyethylene	Less resistance
PVA	Poor resistance

c) Eye protection:

Face shield (EN 166). In case of dust production: protective goggles (EN 166).

d) Skin protection:

Corrosion-proof clothing (EN 14605).

8.2.3 Environmental exposure controls:

See sections 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Crystalline solid
	Grains
Odour	Odourless
Odour threshold	No data available in the literature
Colour	White
Particle size	Variable
Explosion limits	Not applicable
Flammability	Not classified as flammable
Log Kow	Not applicable (inorganic)
	Not quantifiable
Dynamic viscosity	Not applicable (solid)
Kinematic viscosity	Not applicable (solid)
Melting point	72 °C
Boiling point	Not applicable (melting point > 300 °C)
Relative vapour density	Not applicable (solid)
Vapour pressure	< 0.01 hPa ; 20 °C
Solubility	Water ; 21 g/100 ml ; 20 °C ; Anhydrous form
	Ethanol ; insoluble
	Acids ; insoluble
Relative density	0.85 - 1.05 ; Bulk density

Absolute density	1750 kg/m³ ; 20 °C
Decomposition temperature	No data available in the literature
Auto-ignition temperature	Not applicable
Flash point	Not applicable (solid)
pH	> 12.0 ; 1 %

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Basic reaction. May be corrosive to metals.

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

Hydrolyzes on exposure to water and heat. May be corrosive to metals. Reacts exothermically with (some) acids. Reacts violently with (some) halogens.

10.4. Conditions to avoid

Precautionary measures

Avoid raising dust. Keep away from naked flames/heat.

10.5. Incompatible materials

(strong) acids, oxidizing agents, halogens, metals, water/moisture.

10.6. Hazardous decomposition products

Reacts on exposure to water (moisture) with (some) metals: release of highly flammable gases/vapours (hydrogen).

SECTION 11: Toxicological information

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

11.1.1 Test results

Acute toxicity

sodium metasilicate, pentahydrate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		1152 mg/kg bw - 1349 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	EPA OPPTS 870.1200	> 5000 mg/kg bw	24 h	Rat (male / female)	Experimental value	
Inhalation (vapours)	LC50	EPA OPPTS 870.1300	> 2.06 mg/l	4 h	Rat (male / female)	Experimental value	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

sodium metasilicate, pentahydrate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage		0.17 minutes	30 minutes; 1; 2; 4 hours; daily (14 days)	Rabbit	Experimental value	
Skin	Corrosive	OECD 404	4 h	1; 24; 48; 72 hours	Rabbit	Experimental value	
Inhalation	Irritating; STOT SE cat.3					Annex VI	

Conclusion

Causes severe skin burns and eye damage.
May cause respiratory irritation.

Respiratory or skin sensitisation

sodium metasilicate, pentahydrate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	OECD 429			Mouse (female)	Experimental value	

Conclusion

Not classified as sensitizing for skin

Not classified as sensitizing for inhalation

Specific target organ toxicity

sodium metasilicate, pentahydrate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (drinking water)	NOAEL	Equivalent to OECD 408	227 mg/kg bw/day - 237 mg/kg bw/day		No effect	3 month(s)	Rat (male / female)	Experimental value
Dermal								Data waiving
Inhalation								Data waiving

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

sodium metasilicate, pentahydrate

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S. typhimurium and E. coli)		Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster lung fibroblasts (V79)		Experimental value	

Mutagenicity (in vivo)

sodium metasilicate, pentahydrate

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Oral (diet))	Equivalent to OECD 475	24 h	Mouse (male)		Experimental value

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

sodium metasilicate, pentahydrate

No (test)data available

Conclusion

Not classified for carcinogenicity

Reproductive toxicity

sodium metasilicate, pentahydrate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (stomach tube))	NOAEL	Developmental toxicity study	> 200 mg/kg bw/day	18 day(s)	Mouse (male / female)	No effect		Experimental value
Maternal toxicity (Oral (stomach tube))	NOAEL	Developmental toxicity study	12.5 mg/kg bw/day	18 day(s)	Mouse	No effect		Experimental value
Effects on fertility (Oral (drinking water))	NOAEL		> 159 mg/kg bw/day		Rat (female)	No effect		Experimental value

Conclusion

Not classified for reprotoxic or developmental toxicity

Aspiration hazard

Not classified for aspiration toxicity

Toxicity other effects

sodium metasilicate, pentahydrate

No (test)data available

Chronic effects from short and long-term exposure

sodium metasilicate, pentahydrate

Skin rash/inflammation. Respiratory difficulties.

11.2. Information on other hazards

No evidence of endocrine disrupting properties

SECTION 12: Ecological information

12.1. Toxicity

sodium metasilicate, pentahydrate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	ISO 7346-1	210 mg/l	96 h	Danio rerio	Semi-static system	Fresh water	Experimental value; Anhydrous form
Acute toxicity crustacea	EC50	EU Method C.2	1700 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Anhydrous form
Toxicity algae and other aquatic plants	EbC50	DIN 38412-9	207 mg/l	72 h	Desmodesmus subspicatus		Fresh water	Experimental value; Anhydrous form
Long-term toxicity fish								Data waiving
Long-term toxicity aquatic crustacea								Data waiving
Toxicity aquatic micro-organisms	EC0	DIN 38412-27	> 1000 mg/l	0.5 h	Pseudomonas putida		Fresh water	Experimental value
	EC50	OECD 209	> 100 mg/l	3 h	Activated sludge		Fresh water	Experimental value; GLP

Conclusion

Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

12.2. Persistence and degradability

Water

Biodegradability: not applicable

12.3. Bioaccumulative potential

sodium metasilicate, pentahydrate

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (inorganic)			
	Not quantifiable			

Conclusion

Not bioaccumulative

12.4. Mobility in soil

Low potential for adsorption in soil

12.5. Results of PBT and vPvB assessment

The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances.

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties

12.7. Other adverse effects

sodium metasilicate, pentahydrate

Greenhouse gases

Not 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)

Groundwater

Groundwater pollutant

Water ecotoxicity pH

pH shift

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

Can be considered as non 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).

06 02 99 (wastes from the MFSU of bases: wastes not otherwise specified). Depending on branch of industry and production process, also other waste codes may be applicable.

13.1.2 Disposal methods

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. Dispose of at authorized waste collection point.

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	3253

14.2. UN proper shipping name

Proper shipping name	disodium trioxosilicate

14.3. Transport hazard class(es)

Hazard identification number	80
Class	8
Classification code	C6

14.4. Packing group

Packing group	III
Labels	8

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
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	3253

14.2. UN proper shipping name

Proper shipping name	disodium trioxosilicate

14.3. Transport hazard class(es)

Hazard identification number	80
Class	8
Classification code	C6

14.4. Packing group

Packing group	III
Labels	8

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
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/ID number

UN number/ID number	3253

14.2. UN proper shipping name

Proper shipping name	disodium trioxosilicate

14.3. Transport hazard class(es)

Class	8
Classification code	C6

14.4. Packing group

Packing group	III
Labels	8

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
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	3253

14.2. UN proper shipping name

Proper shipping name	disodium trioxosilicate

14.3. Transport hazard class(es)

Class	8

14.4. Packing group

Packing group	III
Labels	8

14.5. Environmental hazards

Marine pollutant	-
Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
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. Maritime transport in bulk according to IMO instruments

Annex II of MARPOL 73/78	Not applicable

Air (ICAO-TI/IATA-DGR)

14.1. UN number/ID number

UN number/ID number	3253

14.2. UN proper shipping name

Proper shipping name	disodium trioxosilicate

14.3. Transport hazard class(es)

Class	8

14.4. Packing group

Packing group	III
Labels	8

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	A803

Passenger and cargo transport

Limited quantities: maximum net quantity per packaging	5 kg

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
	Not applicable (inorganic)

Directive 2012/18/EU (Seveso III)

Not subject to registration according to Directive 2012/18/EU (Seveso III)

European drinking water standards (98/83/EC and 2020/2184)

sodium metasilicate, pentahydrate

Parameter	Parametric value	Note	Reference
Sodium	200 mg/l		Listed in Annex I, Part C, of Directive (EU) 2020/2184 on the quality of water intended for human consumption.

REACH Annex XVII - Restriction

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
· disodium metasilicate, pentahydrate	Substances falling within one or more of the following points: (a) substances classified as any of the following in Part 3 of Annex VI to Regulation (EC) No 1272/2008: — carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, but excluding any such substances classified due to effects only following exposure by inhalation — reproductive toxicant category 1A, 1B or 2 but excluding any such substances classified due to effects only following exposure by inhalation — skin sensitiser category 1, 1A or 1B — skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2 — serious eye damage category 1 or eye irritant category 2	Mixtures for tattooing purposes are subject to the restrictions of Regulation (EU) 2020/2081

	(b) substances listed in Annex II to Regulation (EC) No 1223/2009 of the European Parliament and of the Council (c) substances listed in Annex IV to Regulation (EC) No 1223/2009 for which a condition is specified in at least one of the columns g, h and i of the table in that Annex (d) substances listed in Appendix 13 to this Annex. The ancillary requirements in paragraphs 7 and 8 of column 2 of this entry apply to all mixtures for use for tattooing purposes, whether or not they contain a substance falling within points (a) to (d) of this column of this entry.	

National legislation Belgium

No data available

National legislation The Netherlands

Waterbezwaarlijkheid	B (4); Algemene Beoordelingsmethodiek (ABM)

National legislation France

No data available

National legislation Germany

Lagerklasse (TRGS510)	8 B: Nicht brennbare ätzende Gefahrstoffe
WGK	1; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017

National legislation Austria

No data available

National legislation United Kingdom

No data available

Other relevant data

No data available

15.2. Chemical safety assessment

A chemical safety assessment has been performed.

SECTION 16: Other information

Full text of any H- and EUH-statements referred to under section 3:

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

(*)	INTERNAL CLASSIFICATION BY BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
ATE	Acute Toxicity Estimate
BCF	Bioconcentration Factor
BEI	Biological Exposure Indices
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
EC10	Effect Concentration 10 %
EC50	Effect Concentration 50 %
ErC50	EC50 in terms of reduction of growth rate
GLP	Good Laboratory Practice
LC0	Lethal Concentration 0 %
LC50	Lethal Concentration 50 %
LD50	Lethal Dose 50 %
LOAEC/LOAEL	Lowest Observed Adverse Effect Concentration/Lowest Observed Adverse Effect Level
NOAEC/NOAEL	No Observed Adverse Effect Concentration/No Observed Adverse Effect Level
NOEC/NOEL	No Observed Effect Concentration/No Observed Effect Level
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

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. 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.

Annex to the extended Safety Data Sheet (eSDS)
Identification of the substance or mixture

Product Definition: Mono-constituent substance
Product Name: Disodium metasilicate

SECTION 1: Title of exposure scenario
Overview of Exposure Scenarios

Exposure Scenario	01
Short title of exposure scenario	Manufacture of soluble meta silicates
Sectors of use [SU]	-
Environmental contributing scenarios	ERC01
Health contributing scenarios	PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC09, PROC15, PROC22, PROC23, PROC24
Exposure Scenario	02
Short title of exposure scenario	Formulation of powders covering all molar ratios (detergents, adhesives, binders, surface technologies, other applications) - Industrial uses/ Formulation or re-packing
Sectors of use [SU]	SU02a, SU02b, SU04, SU05, SU06b, SU07, SU09, SU13, SU14, SU15, SU18, SU19, SU20, SU23
Environmental contributing scenarios	ERC02, ERC03
Health contributing scenarios	PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC13, PROC14, PROC15, PROC23
Additional Information	Product category [PC]: PC01, PC04, PC08, PC09a, PC14, PC15, PC20, PC23, PC24, PC32, PC34, PC35, PC39
Exposure Scenario	03
Short title of exposure scenario	Formulation of solutions covering all molar ratios (detergents, adhesives, binders, surface technologies, other applications) - Formulation or re-packing
Sectors of use [SU]	SU04, SU05, SU09, SU13, SU14, SU20
Environmental contributing scenarios	ERC02, ERC03
Health contributing scenarios	PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC13, PROC14, PROC15
Additional Information	Product category [PC]: PC01, PC04, PC08, PC09a, PC14, PC15, PC20, PC23, PC24, PC32, PC34, PC35, PC39
Exposure Scenario	04
Short title of exposure scenario	Industrial use of powders covering all molar ratios (detergents, adhesives, binders, surface technologies, other applications) - Industrial uses/ Formulation or re-packing
Sectors of use [SU]	SU02a, SU02b, SU04, SU05, SU06b, SU07, SU08, SU11, SU12, SU13, SU14, SU15, SU16, SU17, SU18, SU19, SU20, SU23
Environmental contributing scenarios	ERC04, ERC05, ERC06b, ERC06d, ERC07

Health contributing scenarios	PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC13, PROC14, PROC15, PROC17, PROC23, PROC24, PROC26
Additional Information	Product category [PC]: PC01, PC03, PC08, PC09a, PC14, PC15, PC18, PC20, PC21, PC24, PC25, PC32, PC34, PC35, PC37, PC39
Exposure Scenario	05
Short title of exposure scenario	Industrial use of solutions covering all molar ratios (detergents, adhesives, binders, surface technologies, other applications) - Industrial uses/ Formulation or re-packing
Sectors of use [SU]	SU04, SU05, SU11, SU12, SU13, SU14, SU15, SU16, SU17, SU18, SU19, SU20
Environmental contributing scenarios	ERC04, ERC05, ERC06b, ERC06d, ERC07
Health contributing scenarios	PROC01, PROC02, PROC03, PROC04, PROC05, PROC06, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC13, PROC14, PROC15, PROC17, PROC24
Additional Information	Chemical product category [PC]: PC01, PC08, PC09a, PC14, PC15, PC18, PC20, PC21, PC24, PC25, PC32, PC34, PC35, PC37
Exposure Scenario	06
Short title of exposure scenario	Professional use of powders covering all molar ratios (adhesives, binders, surface technologies, other applications) - Professional uses/ Formulation or re-packing
Sectors of use [SU]	SU02a, SU05, SU06b, SU07, SU13, SU15, SU18, SU19, SU23
Environmental contributing scenarios	ERC08a, ERC08b, ERC08c, ERC08d, ERC08f
Health contributing scenarios	PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC13, PROC15, PROC19, PROC21, PROC23, PROC24, PROC25, PROC26
Additional Information	Product category [PC]: PC01, PC09a, PC09b, PC09c, PC15, PC19, PC20, PC21, PC31, PC32, PC34, PC35, PC39
Exposure Scenario	07
Short title of exposure scenario	Professional use of solutions covering all molar ratios (detergents, adhesives, binders, surface technologies, other applications) - Professional uses/ Formulation or re-packing
Sectors of use [SU]	SU04, SU13, SU14, SU20
Environmental contributing scenarios	ERC08a, ERC08c, ERC08d, ERC08f, ERC09a, ERC09b
Health contributing scenarios	PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC13, PROC14, PROC15, PROC19, PROC20, PROC21, PROC24, PROC25
Additional Information	Product category [PC]: PC01, PC08, PC09a, PC09c, PC14, PC15, PC20, PC21, PC31, PC32, PC35
Exposure Scenario	08
Short title of exposure scenario	Consumer use of powders covering all molar ratios (detergents, adhesives, binders, surface technologies, other applications) - Consumer uses
Sectors of use [SU]	-
Environmental contributing scenarios	ERC08a, ERC08b, ERC08c, ERC08d, ERC08e, ERC08f
Health contributing scenarios	Not applicable.

Additional Information	Product category [PC]: PC01, PC03, PC08, PC09a, PC09b, PC09c, PC15, PC31, PC34, PC35, PC39

Exposure Scenario	09
Short title of exposure scenario	Consumer use of solutions covering all molar ratios (detergents, adhesives, binders, surface technologies, other applications) - Consumer uses
Sectors of use [SU]	-
Environmental contributing scenarios	ERC08a, ERC08b, ERC08c, ERC08d, ERC08e, ERC08f, ERC09a, ERC09b
Health contributing scenarios	Not applicable.
Additional Information	Product category [PC]: PC01, PC03, PC08, PC09a, PC09b, PC15, PC16, PC17, PC31, PC35, PC39
Exposure Scenario	10
Short title of exposure scenario	Article life of powders with covering all molar ratios (adhesives, binders) - Consumer uses
Sectors of use [SU]	-
Environmental contributing scenarios	ERC10a, ERC10b, ERC11a, ERC11b
Health contributing scenarios	Not applicable.
Additional Information	Article Categories [AC]: AC01, AC02, AC04, AC05, AC06, AC31

SECTION 2: Exposure controls

Contributing scenario controlling environmental exposure:

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.

Contributing scenario controlling worker exposure:

Organisational measures to prevent/limit releases, dispersion and exposure:

According to table E.3-1 in the “Guidance on information requirements and chemical safety assessment Part E: Risk Characterisation (ECHA, 2012), disodium metasilicate is allocated to the moderate hazard category based on classification as corrosive to skin and eyes.

Moderate hazard category:
- Containment as appropriate.
- Minimise number of staff exposed.
- Segregation of the emitting process.
- Effective contaminant extraction.
- Good standard of general ventilation.
- Minimisation of manual phases.
- Avoidance of contact with contaminated tools and objects.
- Regular cleaning of equipment and work area.
- Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed.
- Training for staff on good practice.
- Good standard of personal hygiene.

Conditions and measures related to personal protection, hygiene and health evaluation:	
Personal Protection:	Moderate hazard category: - Substance/Task appropriate gloves. Wear suitable gloves tested to EN374. - Skin coverage with appropriate barrier material based on potential for contact with the chemicals. - Substance/task appropriate respiratory protection. Wear a respirator conforming to EN140 with type A/P2 filter or better - Optional face shield. - Eye Protection/Chemical goggles. Low hazard category: - Besides the product integrated risk mitigation measures, consumer instructions and the communication on the safe use should be implemented, including technical use instructions, instructions on use of protective clothing and behaviour, storage and disposal instructions.

SECTION 3: Exposure estimation and reference to its source

Environment: All Contributing scenarios	
Exposure assessment (Environment):	As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed.
Exposure estimation:	No environmental risk assessment was performed.
Workers: All Contributing scenarios	
Exposure assessment (Human):	A quantitative risk assessment is not required for human health. Risk management measures are based on qualitative risk characterisation**.**
Exposure estimation:	Qualitative approach used to conclude safe use**.**

SECTION 4: Guidance to DU to evaluate whether he works inside the boundaries set by the ES

General	The immediate downstream user is required to evaluate whether the operational conditions and risk management measures described in the exposure scenario fit to his use. The implemented RMMs and OCs, including PPE will ensure that workers' exposure is reduced in a way that health hazard effects are avoided and that the risk of skin and eye irritation is considered to be adequately controlled. If other OC/RMM are adopted, the user has to ensure that risks are managed to at least equivalent levels.

RMM: Risk Management Measures

OC: Operational Conditions