

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

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

1.1. Product identifier

UFI : QX8C-NJ3K-QJ9P-GC1W
Product name : sodium silicate liquid, (molar ratio >2.6; ≤3.2)
Registration number REACH : 01-2119448725-31 Registered with CAS No of the anhydrous form
Product type REACH : Mixture
CAS number : 1344-09-8
EC number : 215-687-4
Formula : Na₂O.xSiO₂ (2.6<x≤3.2)

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 Belgen - 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
Skin Irrit.	category 2	H315: Causes skin irritation.
Eye Irrit.	category 2	H319: Causes serious eye irritation.

2.2. Label elements



Signal word Warning

H-statements

H315 Causes skin irritation.
 H319 Causes serious eye irritation.

P-statements

P262 Do not get in eyes, on skin, or on clothing.
 P280 Wear protective gloves, protective clothing and eye protection/face protection.
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 1% sodium bicarbonate solution 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.

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

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

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	M-factors and ATE
silicic acid, sodium salt 01-2119448725-31	1344-09-8 215-687-4	20% <C<60%	Skin Irrit. 2; H315 Eye Irrit. 2; H319	(1)(10)	Constituent	

(1) For H- and EUH-statements in full: see section 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:

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. In case of respiratory problems, consult a doctor/medical service.

After skin contact:

If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm) water. If irritation persists, consult a doctor/medical service.

After eye contact:

Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, consult a doctor/medical service.

After ingestion:

Rinse mouth with water. If you feel unwell, 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:

No effects known.

After skin contact:

Tingling/irritation of the skin.

After eye contact:

Irritation 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:

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

No hazardous combustion products known.

5.3. Advice for firefighters

5.3.1 Instructions:

No specific fire-fighting instructions required.

5.3.2 Special protective equipment for fire-fighters:

Gloves (EN 374). Face shield (EN 166). Protective clothing (EN 14605 or EN 13034). Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

Publication date: 2022-08-11

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

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 section 8.2

6.1.2 Protective equipment for emergency responders

Gloves (EN 374). Face shield (EN 166). Protective clothing (EN 14605 or EN 13034).

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.

6.3. Methods and material for containment and cleaning up

Take up liquid spill into absorbent material. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. 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

Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Meet the legal requirements. Protect against frost.

7.2.2 Keep away from:

Heat sources, (strong) acids, metals.

7.2.3 Suitable packaging material:

Stainless steel, HDPE.

7.2.4 Non suitable packaging material:

Zinc, tin, aluminium, 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

silicic acid, sodium salt

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	5.61 mg/m ³	
	Long-term systemic effects dermal	1.59 mg/kg bw/day	

DNEL/DMEL - General population

silicic acid, sodium salt

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	1.38 mg/m ³	
	Long-term systemic effects dermal	0.8 mg/kg bw/day	
	Long-term systemic effects oral	0.8 mg/kg bw/day	

PNEC

Publication date: 2022-08-11

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

silicic acid, sodium salt

Compartments	Value	Remark
Fresh water	7.5 mg/l	
Marine water	1 mg/l	
Fresh water (intermittent releases)	7.5 mg/l	
STP	348 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

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:

High gas/vapour concentration: full face mask with filter type B.

b) Hand protection:

Protective gloves against chemicals (EN 374).

Materials	Remark
PVC	Good resistance
rubber	Good resistance
latex	Good resistance

c) Eye protection:

Face shield (EN 166).

d) Skin protection:

Protective clothing (EN 14605 or EN 13034).

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	Liquid
Viscosity	Viscous
Odour	Odourless
Odour threshold	Not applicable
Colour	No data available on colour
Particle size	Not applicable (liquid)
Explosion limits	Not applicable
Flammability	Not classified as flammable
Log Kow	Not applicable (mixture)
Dynamic viscosity	10 mPa.s - 30000 mPa.s
Kinematic viscosity	No data available in the literature
Melting point	No data available in the literature
Boiling point	100 °C - 105 °C
Relative vapour density	No data available in the literature
Vapour pressure	No data available in the literature
Solubility	Water ; soluble
Relative density	1.30 - 1.60
Absolute density	1300 kg/m ³ - 1600 kg/m ³
Decomposition temperature	No data available in the literature
Auto-ignition temperature	Not applicable
Flash point	Not applicable
pH	11 - 13 ; 1 %

9.2. Other information

Solidification (freezing) point	-12 °C - 0 °C
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SECTION 10: Stability and reactivity

10.1. Reactivity

Basic reaction.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Violent exothermic reaction with (some) acids.

Publication date: 2022-08-11

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

10.4. Conditions to avoid

Precautionary measures

Keep away from naked flames/heat.

10.5. Incompatible materials

(strong) acids, metals.

10.6. Hazardous decomposition products

Reacts slowly 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 silicate liquid, (molar ratio >2.6; ≤3.2)

No (test)data on the mixture available

silicic acid, sodium salt

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	3400 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 silicate liquid, (molar ratio >2.6; ≤3.2)

No (test)data on the mixture available

silicic acid, sodium salt

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Not applicable (in vitro test)	Irritating		1 minutes	30 minutes; 1; 2; 4 hours; daily (14 days)	Rabbit	Experimental value	
Skin	Irritating	OECD 404	4 h	1; 24; 48; 72 hours	Rabbit	Experimental value	

Conclusion

Causes skin irritation.

Causes serious eye irritation.

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No (test)data on the mixture available

Judgement is based on the relevant ingredients

silicic acid, sodium salt

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

Conclusion

Not classified as sensitizing for inhalation

Not classified as sensitizing for skin

Specific target organ toxicity

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No (test)data on the mixture available

silicic acid, sodium salt

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (diet)	NOAEL	Equivalent to OECD 407	2400 mg/kg bw/day		No effect	4 week(s)	Rat (male / female)	Experimental value
Dermal								Data waiving
Inhalation								Data waiving

Publication date: 2022-08-11

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No (test) data on the mixture available

silicic acid, sodium salt

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 473	Chinese hamster lung fibroblasts (V79)		Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster lung fibroblasts (V79)		Experimental value	

Mutagenicity (in vivo)

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No (test) data on the mixture available

silicic acid, sodium salt

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

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No (test) data on the mixture available

silicic acid, sodium salt

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Unknown								Data waiving

Conclusion

Not classified for carcinogenicity

Reproductive toxicity

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No (test) data on the mixture available

silicic acid, sodium salt

	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 days (gestation, daily)	Rat (male / female)	No effect		Experimental value
Maternal toxicity (Oral (stomach tube))	NOAEL	Developmental toxicity study	12.5 mg/kg bw/day	18 days (gestation, daily)	Rat	No effect		Experimental value
Effects on fertility (Oral (drinking water))	NOAEL		> 159 mg/kg bw/day		Rat (male / female)	No effect		Experimental value

Conclusion

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No (test) data on the mixture available

Chronic effects from short and long-term exposure

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No effects known.

11.2. Information on other hazards

No evidence of endocrine disrupting properties

Publication date: 2022-08-11

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

SECTION 12: Ecological information

12.1. Toxicity

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No (test)data on the mixture available

Judgement is based on the relevant ingredients

silicic acid, sodium salt

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	1108 mg/l	96 h	Danio rerio	Semi-static system	Fresh water	Experimental value; GLP
Acute toxicity crustacea	EC50	EU Method C.2	1700 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; GLP
Toxicity algae and other aquatic plants	ErC50	DIN 38412-9	> 345.4 mg/l	72 h	Desmodesmus subspicatus		Fresh water	Experimental value; GLP
Long-term toxicity fish								Data waiving
Long-term toxicity aquatic crustacea								Data waiving
Toxicity aquatic micro-organisms	ECO	DIN 38412-27	3454 mg/l	30 minutes	Pseudomonas putida			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

silicic acid, sodium salt

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
			Data waiving

Conclusion

Water

Biodegradability: not applicable

12.3. Bioaccumulative potential

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

silicic acid, sodium salt

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable			

Conclusion

Does not contain bioaccumulative component(s)

12.4. Mobility in soil

silicic acid, sodium salt

(log) Koc

Parameter	Method	Value	Value determination
			Data waiving

Conclusion

Contains component(s) with potential for mobility in the 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 silicate liquid, (molar ratio >2.6; ≤3.2)

Greenhouse gases

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)

Publication date: 2022-08-11

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

Water ecotoxicity pH

pH shift

silicic acid, sodium salt

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

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997. The waste code must be assigned by the user, preferably in consultation with the (environmental) authorities concerned.

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), Rail (RID), Inland waterways (ADN), Sea (IMDG/IMSBC), Air (ICAO-TI/IATA-DGR)

14.1. UN number

Transport	Not subject
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14.2. UN proper shipping name

14.3. Transport hazard class(es)

Hazard identification number	
Class	
Classification code	

14.4. Packing group

Packing group	
Labels	

14.5. Environmental hazards

Environmentally hazardous substance mark	no
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14.6. Special precautions for user

Special provisions	
Limited quantities	

14.7. Maritime transport in bulk according to IMO instruments

Annex II of MARPOL 73/78	Not applicable, based on available data
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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 silicate liquid, (molar ratio >2.6; ≤3.2)

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

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

Publication date: 2022-08-11

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

· silicic acid, sodium salt	Liquid substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F; (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1.	1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with H304, 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN). 5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: “Keep lamps filled with this liquid out of the reach of children”; and, by 1 December 2010, “Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life-threatening lung damage”; b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: “Just a sip of grill lighter may lead to life threatening lung damage”; c) lamp oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
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National legislation Belgium

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No data available

National legislation The Netherlands

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

Waterbezwaarlijkheid	B (4); Algemene Beoordelingsmethodiek (ABM)
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National legislation France

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No data available

National legislation Germany

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

Lagerklasse (TRGS510)	12: Nicht brennbare Flüssigkeiten, die keiner der vorgenannten LGK zuzuordnen sind
WGK	1; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017

National legislation Austria

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No data available

National legislation United Kingdom

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No data available

Other relevant data

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

No data available

15.2. Chemical safety assessment

No chemical safety assessment has been conducted for the mixture.

SECTION 16: Other information

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

H315 Causes skin irritation.
H319 Causes serious eye irritation.

(*)	INTERNAL CLASSIFICATION BY BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
ATE	Acute Toxicity Estimate
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 %
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

Publication date: 2022-08-11

sodium silicate liquid, (molar ratio >2.6; ≤3.2)

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.

Publication date: 2022-08-11

Annex to the extended Safety Data Sheet (eSDS)

Silicic acid, sodium salt

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product Definition: UVCB (Substance of Unknown or Variable composition, Complex reaction products or Biological materials)

Product Name: Silicic acid, sodium salt

SECTION 1: Title of exposure scenario

Overview of Exposure Scenarios

Exposure Scenario	01
Short title of exposure scenario	Manufacturing of soluble silicates
Sectors of use [SU]	-
Environmental contributing scenarios	ERC01
Health contributing scenarios	PROC01, PROC02, PROC03, PROC04, PROC05, PROC06, PROC07, PROC08a, PROC08b, PROC09, PROC15, PROC22, PROC23, PROC24, PROC28
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, SU08, SU09, SU13, SU14, SU18, SU19, SU20
Environmental contributing scenarios	ERC02, ERC03
Health contributing scenarios	PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC13, PROC14, PROC15, PROC19, PROC21, PROC22, PROC23, PROC24, PROC26, PROC28
Additional Information	Product category [PC]: PC01, PC03, PC08, PC14, PC15, PC20, PC23, PC24, PC26, 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) - Industrial uses/ Formulation or re-packing
Sectors of use [SU]	SU02a, SU02b, SU04, SU05, SU06b, SU08, SU09, SU13, SU14, SU15, SU18, SU19, SU20
Environmental contributing scenarios	ERC02, ERC03
Health contributing scenarios	PROC01, PROC02, PROC03, PROC04, PROC05, PROC06, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC13, PROC14, PROC15, PROC16, PROC19, PROC21, PROC22, PROC23, PROC24, PROC26, PROC28
Additional Information	Product category [PC]: PC01, PC03, PC08, PC09a, PC14, PC15, PC19, PC20, PC23, PC24, PC26, PC32, PC34, PC35, PC38, 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

Annex to the extended Safety Data Sheet (eSDS)

Silicic acid, sodium salt

Sectors of use [SU] Environmental contributing scenarios Health contributing scenarios Additional Information	SU02a, SU02b, SU04, SU05, SU06b, SU08, SU11, SU12, SU13, SU14, SU15, SU16, SU17, SU18, SU19, SU20 ERC04, ERC05, ERC06b, ERC06c PROC01, PROC02, PROC03, PROC04, PROC05, PROC06, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC13, PROC14, PROC15, PROC17, PROC19, PROC21, PROC22, PROC23, PROC24, PROC25, PROC26, PROC28 Product category [PC]: PC01, PC03, PC08, PC09a, PC09b, PC14, PC15, PC18, PC20, PC24, PC25, PC26, PC32, PC34, PC35, PC37, PC38
Exposure Scenario Short title of exposure scenario Sectors of use [SU] Environmental contributing scenarios Health contributing scenarios Additional Information	05 Industrial use of solutions covering all molar ratios (detergents, adhesives, binders, surface technologies, other applications) - Industrial uses/ Formulation or re-packing SU02a, SU02b, SU04, SU05, SU06b, SU07, SU08, SU11, SU12, SU13, SU14, SU15, SU16, SU17, SU18, SU19, SU20 ERC04, ERC05, ERC06a, ERC06b, ERC06d, ERC07 PROC01, PROC02, PROC03, PROC04, PROC05, PROC06, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC13, PROC14, PROC15, PROC16, PROC17, PROC19, PROC21, PROC22, PROC23, PROC24, PROC25, PROC26, PROC28 Product category [PC]: PC01, PC03, PC08, PC09a, PC09b, PC14, PC15, PC18, PC19, PC20, PC23, PC25, PC26, PC32, PC33, PC34, PC35, PC37, PC38
Exposure Scenario Short title of exposure scenario Sectors of use [SU] Environmental contributing scenarios Health contributing scenarios Additional Information	06 Professional use of powders covering all molar ratios (adhesives, binders, surface technologies, other applications) - Professional uses/ Formulation or re-packing SU01, SU02a, SU02b, SU04, SU06b, SU07, SU13, SU14, SU15, SU19, SU20, SU23 ERC08a, ERC08b, ERC08c, ERC08d, ERC08e, ERC08f PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC13, PROC14, PROC15, PROC19, PROC21, PROC24, PROC25, PROC28 Product category [PC]: PC01, PC08, PC09a, PC09b, PC14, PC15, PC19, PC20, PC21, PC31, PC35, PC37, PC38, PC39
Exposure Scenario Short title of exposure scenario Sectors of use [SU] Environmental contributing scenarios Health contributing scenarios	07 Professional use of solutions covering all molar ratios (detergents, adhesives, binders, surface technologies, other applications) - Professional uses/ Formulation or re-packing SU01, SU02a, SU02b, SU04, SU06b, SU07, SU13, SU14, SU15, SU18, SU19, SU20, SU23 ERC08a, ERC08b, ERC08c, ERC08d, ERC08e, ERC08f, ERC09a, ERC09b PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC13, PROC14, PROC15, PROC19, PROC21, PROC24, PROC25, PROC28

Annex to the extended Safety Data Sheet (eSDS)

Silicic acid, sodium salt

Additional Information	Product category [PC]: PC01, PC08, PC09a, PC09b, PC14, PC15, PC19, PC20, PC21, PC26, PC31, PC35, PC37, PC38, PC39
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/ Formulation or re-packing
Sectors of use [SU]	SU02a, SU13, SU19
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, PC14, PC15, PC31, 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/ Formulation or re-packing
Sectors of use [SU]	SU02a, SU06b, SU13, SU18, SU19
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, PC14, PC15, PC26, PC31, PC35, PC37, 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]	SU06b, SU13, SU14
Environmental contributing scenarios	ERC10a, ERC10b, ERC11a, ERC11b
Health contributing scenarios	Not applicable.
Additional Information	Article Categories [AC]: AC01, AC02, AC05, AC06, AC31
Exposure Scenario	11
Short title of exposure scenario	Article life of solutions with covering all molar ratios (adhesives, binders, surface technologies, other applications) - Consumer uses/ Formulation or re-packing
Sectors of use [SU]	SU06b, SU13, SU14, SU15, SU17, SU19
Environmental contributing scenarios	ERC10a, ERC10b, ERC11a, ERC11b
Health contributing scenarios	Not applicable.
Additional Information	Article Categories [AC]: AC01, AC02, AC05, AC06, AC31

Annex to the extended Safety Data Sheet (eSDS)

Silicic acid, sodium salt

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:

As sodium silicate is manufactured in various molar ratios as lumps, powders or aqueous solutions, classification depends on the molar ratio of SiO₂ and Na₂O. According to table E.3-1 in the "Guidance on information requirements and chemical safety assessment Part E: Risk Characterisation" (ECHA, 2012), sodium silicate is allocated to the moderate hazard category for solutions and powders with MR ≤ 2.6 and for powders with molar ratio >2.6 - ≤3.2. Solutions with MR >2.6 - ≤3.2 were allocated to the low hazard category.

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.

Low hazard category:

- Minimisation of manual phases/work tasks.
- Work procedures minimising splashes and spills.
- 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.

Annex to the extended Safety Data Sheet (eSDS)

Silicic acid, sodium salt

Low hazard category:

- Chemical goggles.
- Wear suitable face shield.
- Substance/Task appropriate gloves.
- Full skin coverage with appropriate light-weight barrier material.

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