



PRODUCT: SODIUM SILICATE SOLUTION (CRYS1)

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PRODUCT SPECIFICATION	
Product Name	Sodium Silicate
Alternative Name	
Product Grade	0100, 0112, 0120, 0140, 0501, 0503
Specification Reference	CRYS1/5 (23/04/0051206)

SALES SPECIFICATION				
Test Schedule	Method Index & Test Description	0100	0112	0120
S	CALC Silica as SiO ₂ %	Information only	Information only	Information only
S	1.4 Total Alkali (as Na ₂ O) %	13.7 – 14.3	14.9-15.6	15.7-16.4
S	76.1 Wt. Ratio SiO ₂ :Na ₂ O	1.95 – 2.05:1	1.95-2.05:1	1.95-2.05:1
S	2.2 Specific Gravity @ 20°C	1.495 – 1.505	1.555 – 1.565	1.595-1.605
S	Equivalent Twaddle oTw	99.0 – 101.0	111.0-113.0	119.0-121.0

Test Schedule	Method Index & Test Description	0140	0501	0503
S	CALC Silica as SiO ₂ %	Information only	Information only	Information only
S	1.4 Total Alkali (as Na ₂ O) %	17.7 – 18.3	17.0 -18.4	12.2-12.7
S	76.1 Wt. Ratio SiO ₂ :Na ₂ O	1.95 – 2.05:1	1.5 -1.7	2.45-2.55
S	2.2 Specific Gravity @ 20°C	1.695 – 1.705	1.55 -1.60	1.495-1.505
S	Equivalent Twaddle oTw	139.0 – 141.0	110 – 118	99.0-101.0
	Total Solids	N/A	44 – 46%	N/A

Test Schedule Key: S = Snap Test

Additional Comments/Key: Silica Calculation: Total Alkali x Wt. Ratio

NOTES

Exclusion of Liability

Information contained in this publication is accurate to the best of the knowledge and belief of Tennants.

Any information or advice obtained from Tennants otherwise than by means of this publication and whether relating to Tennants materials or other materials, is also given in good faith. However, it remains at all times the responsibility of the customer to ensure that Tennants materials are suitable for the particular purpose intended.

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Health and Safety

A Material Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on the handling precautions and emergency procedures. This must be consulted fully before handling, storage and use.



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SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

1.1 Product Identifier

Product Name Crystal 0100, Crystal 0112, Crystal 0120, Crystal 0140, Crystal 0501, Crystal 0503
Alternative Names Silicic acid, sodium salt (1.6<MR<=2.6)
CAS Number Sodium Silicate Solution
EINECS Number 1344-09-8
REACH Registration Number 215-687-4
01-2119448725-31-xxxx

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

Identified use(s) General purpose industrial chemical for use in a wide range of applications.
Binding agent; Corrosion inhibitor; dust binding agent; Flame retardant or fire preventing agent; Flotation agent; Stabiliser; Viscosity control agent.
Uses advised against See also Annex to the extended Safety Data Sheet
None known

1.3 Details of the supplier of the safety data sheet

Tennants Distribution Limited
Hazelbottom Road
Cheetham
Manchester
M8 0GR
Tel: 44(0)161 205 4454
Fax: 44(0) 161 203 4298
Email: msds@tennantsdistribution.com

1.4 Emergency telephone number

Tel: 44(0)844 335 0001 (24 hours)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Regulation 1272/2008 (CLP)

GHS Classification
H318: Causes serious eye damage/irritation - Category 1
H315: Skin corrosion/irritation – Category 2

Hazard summary

Alkaline. Risk of serious damage to eyes. Irritating to skin

2.2 Label elements

2.2.1 According to Regulation (EC) No. 1272/2008 (CLP).

Hazard Pictogram



Signal word(s) Danger.

Hazard statement(s)

H315: Causes skin irritation.
H318: Causes serious eye damage.

Precautionary statement(s)

P262: Do not get in eyes, on skin, or on clothing.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/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



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Not applicable					
3. COMPOSITION/INFORMATION ON INGREDIENTS					
Classification					
Ingredient	CAS Number	EINECS Number	REACH registration number	Classification according to Regulation 1272/2008	Content (W/W)
Silicic acid, sodium salt	1344-09-8	215-687-4	01-2119448725-31-XXXX	H315: Skin Irrit.2; H318: Eye Dam. 1; H335: STOT SE 3;	35-55%
Water	7732-18-5	231-791-2			45-65%
4. FIRST AID MEASURES					
4.1 Description of first aid measures					
Inhalation Remove patient from exposure, keep warm and at rest. Obtain medical attention.					
Skin contact Wash affected skin with plenty of water. If symptoms develop, obtain medical attention.					
Eye contact Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediately medical attention.					
Ingestion Do not induce vomiting. Wash out mouth with water and give 200-300ml (half a pint) of water to drink. Obtain medical attention.					
4.2 Most important symptoms and effects, both acute and delayed Alkaline Risk of serious damage to eyes. Irritating to skin. The toxicity of sodium silicate is dependent on the silica to alkali ratio and on the pH.					
4.3 Indication of any immediate medical attention and special treatment needed Obtain immediate medical attention.					
5. FIRE FIGHTING MEASURES					
5.1 Extinguishing Media Suitable extinguishing media: Compatible with all standard fire fighting techniques. Unsuitable extinguishing media: None known					
5.2 Special hazards arising from the substance or mixture Not applicable. Aqueous solution. Non-combustible.					
5.3 Advice for fire-fighters None.					
6. ACCIDENTAL RELEASE MEASURES					
6.1 Personal precautions, protective equipment and emergency procedures Wear suitable protective clothing. Wear eye/face protection					
6.2 Environmental precautions Do not allow to enter drains, sewers or watercourses. Advise Authorities if spillage has entered water course or sewer or has contaminated soil or vegetation..					
6.3 Methods and material for containment and cleaning up Caution-spillages may be slippery. Contain spillages with sand, earth or any suitable absorbent material. Transfer to container for disposal or recovery					
6.4 Reference to other sections See section 8					
7. HANDLING AND STORAGE					
7.1 Precautions for safe handling Avoid contact with eyes, skin and clothing. Avoid generation of mist. Provide adequate ventilation. Emergency shower and eyewash should be readily available. See Also Section 8.					
7.2 Conditions for safe storage, including any incompatibilities Keep at room temperature not exceeding (50°C) Do not allow material to freeze. Provide an adequate bund wall. Unsuitable containers: Aluminium See section 10					
7.3 Specific end use(s) See Annex to the extended Safety Data Sheet					



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8. EXPOSURE CONTROLS/PERSONAL PROTECTION			
8.1 Control parameters			
No Occupational Exposure Limits Assigned. An exposure limit of 1mg/m ³ (15 min TWA) is recommended by analogy with sodium hydroxide.			
Derived No Effect Level (DNEL)	Oral mg/kg bw/d	Inhalation mg/m³	Dermal mg/kg bw/d
Worker –Acute – Systemic effects	-	-	-
Worker –Acute – Local effects	-	-	-
Worker –Long term – Systemic effects	-	5.61	1.59-
Worker –Long term – Local effects	-	-	-
Consumer–Acute – Systemic effects	-	-	-
Consumer–Acute – Local effects	-	-	-
Consumer–Long Term – Systemic effects	0.80	1.38	0.80
Consumer–Long Term – Local effects	-	-	-
For further details and guidance see Exposure Scenario in Annex to the extended Safety data Sheet (eSDS). Risk management measures (RMMs) for identified uses must be implemented as described in this SDS and in the relevant exposure scenarios.			
	Predicted No Effect Concentration		
PNEC Water (fresh)	7.5 mg/l		
PNEC Water (marine)	1mg/l		
PNEC Water (intermittent)	7.5mg/l		
PNEC Sediment	Not available		
PNEC Soil	Not available		
PNEC Sewage treatment plant	348mg/l		
PNEC Secondary Poisoning (oral)	Not applicable		
8.2 Exposure controls			
Wear protective equipment to comply with good occupational hygiene practice. Do not eat, drink or smoke at the work place.			
Appropriate engineering controls Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (dilution and local exhaust), and control of process conditions.			
Respiratory protection Respiratory protection not normally required. Advice on respiratory protective equipment is given in the HSE (Health and Safety Executive) publication HS(G)53.			
Eye protection Chemical goggles.			
Skin & hand protection Wear Suitable protective clothing and gloves. Plastic or rubber gloves. For example EN374-3, level 6 breakthrough time (>480min). Wear suitable overalls.			
8.2.3 Environmental exposure controls The primary hazard of sodium silicate is the alkalinity. Avoid release to the environment.			
9. PHYSICAL AND CHEMICAL PROPERTIES			
9.1 Information on basic physical and chemical properties			
Appearance	Liquid. Almost colourless		
Odour	Odourless		
Odour threshold	Not applicable		
pH value	Strongly alkaline		
Melting point/freezing point	Not applicable		
Boiling point/boiling range	100°C		
Flash point	Not applicable		
Evaporation rate	Not applicable		
Flammability (solid, gas)	Not applicable		
Explosive limit ranges	Not applicable		
Vapour pressure(mm Hg)	Not applicable		
Vapour density (Air=1)	No data		



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Density	No data
Solubility (Water)	Soluble
Solubility (Other)	No data
Partition of coefficient	No data
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity	Not applicable
Explosive properties	Not applicable
Oxidising properties	Not applicable
9.2 Other information	No data
10. STABILITY AND REACTIVITY	
10.1 Reactivity See section 10.3	
10.2 Chemical stability Stable	
10.3 Possibility of hazardous reactions When arc welding vessels containing aqueous solutions of this material, take care to control any explosion risk from hydrogen evolved by electrolysis. Aqueous solutions will react with aluminium, zinc, tin, and their alloys evolving hydrogen gas which can form an explosive mixture with air. Can react violently if in contact with acids. Can react with sugar residue to form carbon monoxide	
10.4 Conditions to avoid See section 10.3	
10.5 Incompatible materials See section 10.3	
10.6 Hazardous decomposition products None known	
11. TOXICOLOGICAL INFORMATION	
11.1 Information on toxicological effects	
Acute Oral Toxicity All symptoms of acute toxicity are due to high alkalinity. Material will cause irritation. Oral LD50 (rat) 3400 mg/kg bw	
Acute inhalation toxicity Mist is irritation to the respiratory tract. All symptoms of acute toxicity are due to high alkalinity. Inhalation LC50 (rat) >2.06 g/m ³ .	
Acute Dermal Toxicity Skin contact- Material will cause irritation. Dermal LD50 (rat) >5000mg/kg bw Eye contact- Material will cause severe irritation. Risk of serious damage to eyes.	
Skin Corrosion/Irritation Irritation to skin	
Serious eye damage/eye irritation Irritation to eyes. Risk of serious damage to eyes.	
Sensitisation Not sensitising	
Mutagenicity No evidence of genotoxicity. In vitro/in vivo negative	
Carcinogenicity No structural alerts.	
Reproductive toxicity No evidence of reproductive toxicity or development toxicity.	
STOT- single exposure Not classified	
STOT-repeated exposure Not classified. NOAEL oral (rat) >159mg/kg bw/d	
Aspiration hazard Not classified	



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12. ECOLOGICAL INFORMATION	
12.1 Toxicity Fish (Brachydanio rerio) LC50 (96 hour) 1108 mg/l Aquatic invertebrates: (Daphnia magna) EC50 (48 hour) 1700 mg/l	
12.2 Persistence and degradability Inorganic. Soluble silicates, upon dilution, rapidly depolymerise into molecular species indistinguishable from natural dissolved silica.	
12.3 Bio accumulative potential Inorganic. The substance has no potential for bioaccumulation.	
12.4 Mobility in soil Not applicable	
12.5 Results of PBT and vPvB assessment Not classified as PBT or vPvB,	
12.6 Other adverse effects The alkalinity of this material will have a local effect on ecosystems sensitive to changes in pH.	
13. DISPOSAL CONSIDERATIONS	
13.1 Waste treatment methods Discharge of this product to sewage treatment works is dependent on local regulations with regard to pH controls. Dispose of this material and its containers to hazardous or special waste collection point. This material is classified as hazardous waste under EEC Directive 91/689/EEC (and amendments). This material is classified as hazardous waste under the Hazardous Waste (England and Wales) Regulations SI 2005 No. 894. Disposal should be in accordance with local, state or national legislation.	
14. TRANSPORT INFORMATION	
14.1 UN Number	Not classified according to the United Nations 'Recommendations on the Transport of Dangerous Goods'
14.2 Proper Shipping Name	Not applicable
14.3 Transport hazard class	Not applicable
14.4 Packing group	Not applicable
14.5 Environmental	Not classified as a Marine Pollutant
14.6 Special precautions for users	Unsuitable packaging - Aluminium
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	
15. REGULATORY INFORMATION	
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture TSCA Inventory Status: Reported/Included. AICS Inventory Status: Reported/Included. DSL/NDSL Inventory Status: Reported/Included. German Water Hazard Classification VwVwS: Product ID number 1314, WGK class 1 (low hazard to water)	
15.2 Chemical safety assessment Information available on request	
16. OTHER INFORMATION	
Glossary H315: Causes skin irritation. H318: Causes serious eye damage. H335: May cause respiratory irritation STOT SE 3: Specific target organ toxicity – single exposure Category 3 DNEL: Derived No Effect Level PNEC: Predicted No Effect Concentration PBT: Persistent, Bioaccumulative and Toxic	
Source of key data used to compile the data sheet Supplier information (120626)	
Modifications from last revision Specification for Crystal 0501 has been updated. Date: 12/04/2023 Copyright© Tennants Distribution Ltd (2023)	