TENNANTS DISTRIBUTION LIMITED
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PRODUCT SPECIFICATION

Product Name	Sodium Silicate / **Colourcraft Liquid Batik Dye Fixer**
Alternative Name	
Product Grade	0100, 0112, 0120, 0140, 0501, 0503
Specification Reference	CRYS1/4 (03/10)

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_2O) %	13.7 – 14.3	14.9-15.6	15.7-16.4
S	76.1 Wt. Ratio SiO_2:Na_2O	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_2O) %	17.7 – 18.3	17.5-18.4	12.2-12.7
S	76.1 Wt. Ratio SiO_2:Na_2O	1.95 – 2.05:1	1.54-1.66:1	2.45-2.55
S	2.2 Specific Gravity @ 20°C	1.695 – 1.705	1.595-1.605	1.495-1.505
S	Equivalent Twaddle oTw	139.0 – 141.0	119.0-121.0	99.0-101.0

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.

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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.

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 Silicic acid, sodium salt (1.6<MR<=2.6)
Alternative Names	Sodium Silicate Solution
CAS Number	1344-09-8
EINECS Number	215-687-4
REACH Registration Number	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. See also Annex to the extended Safety Data Sheet
Uses advised against	None known

1.3 Details of the supplier of the safety data sheet

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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

2.2.1According 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

Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Classification

Ingredient	CAS Number	EINECS Number	REACH registration number	Classification according to Regulation1272/2008	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 import 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^{o}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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

No Occupational Exposure Limits Assigned.
An exposure limit of 1mg/m3 (15 min TWA) is recommended by analogy with sodium hydroxide.

Derived No Effect Level (DNEL)	Oral mg/kg bw/d	Inhalation mg/m^3	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^{o}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

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

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
The Safety Data Sheet has been updated in Section 2, 3 and 16 in accordance with current requirements
Date: 11/10/18