

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product Identifier:

Product Name: Crystal 0070, Crystal 0075, Crystal 0079, Crystal 0084, Silicic acid, Sodium salt (<MR>=3.2)
Alternative Names: Sodium Silicate Solution
CAS Number: 1344-09-8
EINECS Number: 215-687-4
REACH Registration Number: 01-2119448725-31-XXXX

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.

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

GHS Classification: Not classified as dangerous for supply/use.

Hazard summary: Alkaline.

Label elements:

Signal word(s): None.

Hazard statement(s): None.

Precautionary statement(s): P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Other hazards: Not classified as PBT or vPvB.

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3. COMPOSITION / INFORMATION ON INGREDIENTS

Classification

Ingredient	CAS No	EINECS No	REACH registration No	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; H319: Eye Irrit 2; H335: STOT SE 3;	20 - 40%
Water	7732-18-5	231-791-2			60 - 80%

4. FIRST AID MEASURES

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.

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.

Indication of any immediate medical attention and special treatment needed: Obtain immediate medical attention.

5. FIRE-FIGHTING MEASURES

Extinguishing Media:

Suitable extinguishing media: Compatible with all standard fire-fighting techniques.

Unsuitable extinguishing media: None known.

Special hazards arising from the substance or mixture: Not applicable. Aqueous solution. Non-combustible.

Advice for fire-fighters: None.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Wear suitable protective clothing. Wear eye/face protection.

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.

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.

Reference to other sections: See section 8.

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7. HANDLING AND STORAGE

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.

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.

Specific end use(s): See Annex to the extended Safety Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters: Silicic acid, sodium salt - 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)	7.5mg/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

Exposure controls: Wear protective equipment to comply with good occupational hygiene practice.
Do not eat, drink or smoke at the workplace.

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.

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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.

Environmental exposure controls: The primary hazard of sodium silicate is the alkalinity. Avoid release to the environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Appearance:	Liquid. Almost colourless
Odour:	Odourless
Odour threshold:	Not applicable
pH value:	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
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
Other information:	No data

10. STABILITY AND REACTIVITY

Reactivity: See section 10.3.

Chemical stability: Stable.

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.

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Conditions to avoid: See section 10.3.

Incompatible materials: See section 10.3.

Hazardous decomposition products: None known.

11. TOXICOLOGICAL INFORMATION

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/m3.

Acute Dermal Toxicity:

Skin contact: Material will cause irritation. Dermal LD50 (rat) >5000mg/kg bw.

Eye contact: Liquid or mist may cause discomfort or mild irritation.

Skin Corrosion/Irritation: Repeated and/or prolonged skin contact may cause slight irritation.

Serious eye damage/eye irritation: Liquid or mist may cause discomfort and mild irritation.

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

Toxicity: Fish (Brachydanio rerio) LC50 (96 hour) 1108 mg/l Aquatic invertebrates: (Daphnia magna)
EC50 (48 hour) 1700 mg/l

Persistence and degradability: Inorganic. Soluble silicates, upon dilution, rapidly depolymerise into molecular species indistinguishable from natural dissolved silica.

Bio accumulative potential: Inorganic. The substance has no potential for bioaccumulation.

Mobility in soil: Not applicable.

Results of PBT and vPvB assessment: Not classified as PBT or vPvB.

Other adverse effects: The alkalinity of this material will have a local effect on ecosystems sensitive to changes in pH.

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13. DISPOSAL CONSIDERATIONS

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

UN Number: Not classified according to the United Nations 'Recommendations on the Transport of Dangerous Goods'.

Proper Shipping Name: Not applicable.

Transport hazard class: Not applicable.

Packing group: Not applicable.

Environmental: Not classified as a Marine Pollutant.

Special precautions for users: Unsuitable packaging – Aluminium.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

15. REGULATORY INFORMATION

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).

Chemical safety assessment: Information available on request.

Note: The regulatory information given above only indicates the principal regulations specifically Applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3:

H315: Causes skin irritation.

H319: Causes serious eye irritation.

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Legal disclaimer:

The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.