# SAFETY DATA SHEET

# SODIUM SILICATE SOLUTION

Issued: September 2020

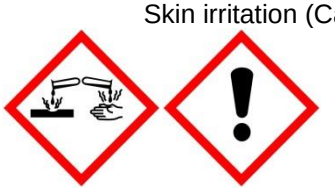
Hazardous according to criteria of Safe Work Australia

## 1 PRODUCT & COMPANY UNDERTAKING IDENTIFICATION

| | |
|---|---|
| Product Name: | **SODIUM SILICATE SOLUTION** |
| Major Recommended Use: | Concrete and masonry surface treatment. Industrial protective sealer. |
| Company: | Australian Slate-Crete Supplies Pty Ltd |
| ABN: | 35 051 984 993 |
| Address: | 12 Yale Drive, Epping, Victoria, 3076 |
| Telephone Number: | 61 (03) 9408 7722 |
| Emergency/AH telephone: | 0410 542 100 |
| Web site: | www.australianslatecrete.com.au |

## 2 HAZARDS IDENTIFICATION

**GHS Classification:** GHS05 Corrosive to metals (Category 1)
Serious eye damage (Category 1)
GHS07 Specific target organ toxicity - single exposure (Category 3), Respiratory system
Skin irritation (Category 2)



GHS05 GHS07

**Signal word:** DANGER

**Hazard statements:**

| | |
|---|---|
| H290 | May be corrosive to metals. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation |
| H335 | May cause respiratory irritation. |

**Precautionary statements:**

| | | |
|---|---|---|
| Prevention | P234 | Keep only in original container. |
| | P262 | Do not get in eyes, on skin, or on clothing. |
| | P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| Response | P301+330+331 | IF SWALLOWED: rinse mouth. Do NOT induce vomiting. |
| | P303+361+353 | IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| | P305+351+338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| | P310 | Immediately call POISON INFORMATION CENTRE on **13 11 26** or doctor. |
| | P390 | Absorb spillage to prevent material damage. |
| Storage | P403+233 | Store in a well-ventilated place. Keep container tightly closed. |
| Disposal | P501 | Dispose of contents/ container to an approved waste disposal plant. |

**Hazard Codes**: Xi (irritant)

**Risk Statements:**

| | |
|---|---|
| R38 | Irritating to skin. |
| R41 | Risk of serious damage to eyes. |

**Safety Statements:**

| | |
|---|---|
| S24/25 | Avoid contact with skin and eyes |
| S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice |
| S36/37/39 | Wear suitable protective clothing, gloves and eye/face protection. |
| S62 | If swallowed, do not induce vomiting; seek medical advice immediately and show this SDS, container or label. |

**Poisons Schedule:** S5

**ADG CLASS:** Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. Not regulated for transport of Dangerous Goods: UN, IATA, IMDG

**Signs and Symptoms of Exposure *(Acute effects)*:**

**Swallowed:** Ingestion can result in nausea, vomiting, abdominal pain and diarrhoea. May cause severe irritation to the mouth, throat and stomach.

**Eye:** A severe eye irritant. May cause conjunctivitis (inflammation of the eyes) and possibly corneal burns and ulceration.

**Skin:** Irritating to skin. May cause itching and skin rash.

**Inhaled:** Exposure to vapours at room temperature is an unlikely route of exposure due to its low vapour pressure. Spray mist will cause respiratory irritation and may result in coughing as well as inflammation of nose, throat and windpipe.

**Chronic*:*** Prolonged or repeated skin contact may cause dry skin. Defatting of the skin can result in irritation and dermatitis (inflammation of the skin).

**Emergency Overview:** Clear to hazy, colourless, odourless, thick liquid. Causes eye, skin and digestive irritation. Spray mist causes irritation to the respiratory tract. Spills are slippery. High pH is harmful to aquatic life. Reacts with acids, ammonium salts, reactive metals and some organics. Non-combustible but flammable hydrogen gas may be produced on prolonged contact with metals such as aluminium, tin, lead and zinc.

**Other Information:** Dries to form glass film which can easily cut skin. Can etch glass if not promptly removed.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| **Chemical Name** | **CAS Number** | **Proportion** | **Classification** |
|---|---|---|---|
| Silicic acid, sodium salt | 1344-09-8 | 30-60% | Xi; R38-41 |
| Water | 7732-18-5 | to 100% | |

**Description**: Mixture of sodium oxide ($Na_2O$), silica ($SiO_2$) and water.

## 4 FIRST AID MEASURES

**First Aid Facilities:** Eyewash fountains and safety showers should be available for emergency use.

4.1 **Description of first aid measures**

Eye Contact: Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.

Skin Contact: Wash affected skin with plenty of water. If symptoms develop, obtain medical attention.

Inhalation: Remove patient from exposure, keep warm and at rest. Obtain medical attention.

Ingestion: Do not induce vomiting. Wash out mouth with water and give 200-300mL (1-2 cups) of water to drink. Obtain medical attention.

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

Alkaline.
Irritating to eyes and 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

**NON-FLAMMABLE, NON-COMBUSTIBLE substance**

5.1 **Extinguishing media**

Suitable extinguishing media: Compatible with all standard firefighting techniques.
Unsuitable 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:** Wear protective clothing, boots, gloves, and eye protection. (refer Section 8.2)

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 materials for containment and cleaning up** Caution – spillages may be slippery.
Contain spillages with sand, earth or any suitable adsorbent material.
Transfer to a container for disposal or recovery.

## 7 HANDLING & STORAGE

| | | |
|---|---|---|
| 7.1 | **Precautions for safe handling** | Avoid contact with eyes, skin and clothing. Avoid generation of mist. Provide adequate ventilation. Emergency shower and eye wash facilities should be readily available. See also Section 8 |
| 7.2 | **Conditions for safe storage, including incompatibilities** | Storage temperature 0-95ºC. Loading temperature 45-95ºC.<br>Do not allow material to freeze. Provide an adequate bund wall.<br>Unsuitable containers: Aluminium<br>See also Section 10. |
| 7.3 | **Specific end use(s)** | See also Annex to the extended Safety Data Sheet. |

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 **Control parameters**

| SUBSTANCE | Occupational Exposure Limits |
|---|---|
| Silicic acid, sodium salt | No Occupational Exposure Limit assigned.<br>An exposure limit of 2 mg/m$^3$ (15 min TWA) is recommended by analogy with sodium hydroxide (UK EH40). |

| | | |
|---|---|---|
| 8.2 | **Exposure controls** | Wear protective equipment to comply with good occupational hygiene practice. Do not eat, drink or smoke at the work place. |
| 8.2.1 | **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. |
| 8.2.2 | **Personal Protection** |  |
| | Respiratory protection | Respiratory protection not normally required. If engineering controls are not effective in controlling airborne exposure then an approved respirator or dust mask should be used. Refer Australian Standards AS/NZS 1715 and 1716 for more information. |
| | Eye/face protection | Safety glasses with top and side shields, goggles or face shield. Refer Australian Standards AS 1336 and AS/NZS 1337 for more information. |
| | Skin protection | Impervious plastic or rubber gloves and suitable protective work wear. Refer Australian Standards AS 2161, 2919 and AS/NZS 2210 for more information. |
| 8.2.3 | **Environmental Exposure Controls** | The primary hazard of sodium silicate is the alkalinity. Avoid release to the environment. |

## 9 PHYSICAL & CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance: | Clear colourless liquid |
| Smell: | Odourless |
| pH: | 11 – 13 (very alkaline) |
| Boiling Point (at 760 mmHg): | 105 – 108°C |
| Melting/Pour Point: | ≈ 0°C |
| Flashpoint: | Not flammable, will not burn |
| Flammability: | Non-combustible liquid. The aqueous solution is not flammable under normal conditions of use. Flammable hydrogen gas may be produced on prolonged contact with metals such as aluminium, tin, lead and zinc. |
| Explosive Limits: | Not applicable |
| Auto-ignition Temperature: | Not applicable |
| Oxidizing Properties: | No data available |
| Vapour Pressure (20°C): | No data available |
| Vapour Density (Air =1): | No data available |
| Solubility in Water: | Soluble |
| Viscosity: | 300 – 500 mPa.s |
| Specific Gravity: | 1.39 – 1.45 |
| VOC content: | Nil |

## 10 STABILITY & REACTIVITY

| | | |
|---|---|---|
| 10.1 | **Reactivity** | See Section 10.3 below |
| 10.2 | **Chemical stability** | Stable under normal use conditions. |
| 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 residues to form carbon monoxide. |
| 10.4 | **Conditions to avoid** | See Section 10.3 above |
| 10.5 | **Incompatibility** (materials to avoid) | See Section 10.3 above |
| 10.6 | **Hazardous decomposition product(s)** | None known. |

## 11 TOXICOLOGICAL INFORMATION

**Acute toxicity**

| | |
|---|---|
| Ingestion | All symptoms of acute toxicity are due to high alkalinity. Material will cause irritation. Oral $LD_{50}$ (rat) 3400 mg/kg body weight |
| Inhalation | Mist is irritant to the respiratory tract. All symptoms of acute toxicity are due to high alkalinity. Inhalation $LC_{50}$ (rat) >2.06 g/m$^3$ |
| Skin Contact | Material will cause irritation. Dermal $LD_{50}$ (rat) >5000 mg/kg bw |
| Eye Contact | Material will cause irritation. |
| Skin corrosion/irritation | Irritating to skin. |
| Serious eye damage/irritation | Irritating to eyes. |
| Sensitisation | Not sensitising. |
| Mutagenicity | No evidence of genotoxicity. In vitro/in vivo negative. |
| Carcinogenicity | No structural alerts. IARC, NTP, OSHA, ACGIH do not list this product as known or suspected carcinogen. |
| **Reproductive toxicity** | No evidence of reproductive toxicity or developmental toxicity. |
| STOT – single exposure | Not classified |
| STOT – repeated exposure | Not classified. NOAEL oral (rat) >159 mg/kg bw/dose |
| Aspiration hazard | Not classified |
| Other information | |

## 12 ECOLOGICAL INFORMATION

| | | |
|---|---|---|
| 12.1 | **Toxicity** | Fish (Brachydanio rerio) $LC_{50}$ (96 hour) 1108 mg/L<br>Aquatic invertebrates: (Daphnia magna) $EC_{50}$ (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 | **Bioaccumulative 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

| | |
|---|---|
| **Precautions:** | Refer to Section 7 before handling the product or containers. |
| **Waste disposal:** | Recover or recycle if possible. Otherwise: dispose of this material and its container to hazardous or special waste collection point. Disposal should be in accordance with local, state or national legislation. |
| **Product disposal:** | Recover or recycle if possible. Otherwise: dispose of this material and its container to hazardous or special waste collection point. Disposal should be in accordance with local, state or national legislation. |
| **Container disposal:** | Drain container thoroughly. Send to drum recoverer or metal reclaimer. |

## 14 TRANSPORT INFORMATION

Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

| Mode | Regulations | Class | Packing Group | Notes |
|---|---|---|---|---|
| - | UN | None allocated | Not applicable | |
| Sea | IMDG | None allocated | Not applicable | This material is not classified as dangerous under IMDG regulations |
| Road/Rail | ADG Code | None allocated | Not applicable | This material is not classified as dangerous according to the Australian Dangerous Goods Code |
| Air | IATA/ICAO | None allocated | Not applicable | This material is not classified as dangerous under IATA regulations |

This material is a Scheduled Poison (S5) and must be stored, maintained and used in accordance with the relevant regulations.

## 15 REGULATORY INFORMATION

**EEC Symbol:** Xi Irritant

**GHS Classification:**

| | |
|---|---|
| GHS05 | Corrosive to metals (Category 1)<br>Serious eye damage (Category 1) |
| GHS07 | Specific target organ toxicity - single exposure (Category 3), Respiratory system<br>Skin irritation (Category 2) |

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

| | |
|---|---|
| Eye Dam. | Serious eye damage |
| H290 | May be corrosive to metals. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation |
| H335 | May cause respiratory irritation. |
| Met. Corr. | Corrosive to metals |
| Skin Corr. | Skin corrosion |
| STOT SE | Specific target organ toxicity – single exposure |

**EEC Council Directives relating to the classification, packaging and labelling of dangerous substances and preparations Risk (R) and Safety (S) phrases:**

| | |
|---|---|
| R38 | Irritating to skin. |
| R41 | Risk of serious damage to eyes. |
| S24/25 | Avoid contact with skin and eyes |
| S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice |
| S36/37/39 | Wear suitable protective clothing, gloves and eye/face protection. |
| S62 | If swallowed, do not induce vomiting; seek medical advice immediately and show this SDS, container or label. |

## 16 OTHER INFORMATION

**Uses and restrictions:** Raw material for use in the chemical industry.

**SDS distribution:** The information in this document should be made available to all who may handle the product.

**Reference:** The content and format of this safety data sheet is in accordance with the 3rd Revised Edition of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia's Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals (2011)

**Issue Date:** 15th September, 2020

**Reason for Issue:** Supersedes previous issue dated 9th July, 2015
Updated manufacturer and contact details