

**Forti-Kal™ Potassium Silicate Solution**

# MATERIAL SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

### 1.1 Product Identifier

Product name: Forti-Kal™ potassium silicate solution (MR>3.2)

### 1.2 Uses and uses advised against

Uses: Densifying concrete, sealing concrete, concrete curing coating

### 1.3 Details of the supplier of the product

Supplier name: Chemforce Pty Ltd  
Address: 34 Law Court, Sunshine West, 3020, VIC, Australia  
Telephone: +61 (0)417 339927  
Email: [john@chemforce.com.au](mailto:john@chemforce.com.au)

### 1.4 Emergency telephone numbers

Emergency: +61 (0)417 339927

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

GHS Classification: Skin Irrit. 2  
Eye Irrit. 2

Hazards summary: Alkaline. Irritating to eyes and skin.  
Spilled material is slippery.

### 2.2 Label elements

Hazard pictogram(s)



Signal word(s): Warning  
Hazard statement(s): H315: Causes skin irritation.  
H319: Causes serious eye irritation

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

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

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Regulation (EC) No. 1272/2008 (CLP)

Ingredients	% W/W	Cas No.	EINECS No. / REACH Registration	Hazard symbol(s) and hazard statement(s)
Silicic acid, potassium salt	14 - 30	1312-76-1	215-199-1	H319 : Eye Irrit. 2 ; H315 : Skin Irrit. 2 ;
Water	70 - 86	7732-18-5	231-791-2	

## 4. FIRST AID MEASURES

### 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 200-300 ml (half a pint) 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

### 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 Personalcutions,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 / 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.

### **6.4 Reference to other sections**

See Also 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 eye wash facilities should be readily available. See Also Section 8

### **7.2 Conditions for safe storage, including any incompatibilities**

Storage temperature 0-95° C. Loading temperature 45-95 ° C.  
Do not allow material to freeze. Provide an adequate bund wall.  
Unsuitable containers: Aluminium See Also Section 10.

### **7.3 Specific end use(s)**

See also Annex to the extended Safety Data Sheet

## **8. EXPOSURE CONTROL / PERSONAL PROTECTION**

### **8.1 Control parameters**

Substance	Occupational Exposure Limits
Silicic acid, sodium salt	No Occupational Exposure Limit assigned. An exposure limit of 2 mg/m3 (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. Advice on respiratory protective equipment is given in the HSE (Health and Safety Executive) publication HS(G)53.

##### **Eye/face protection**

Chemical goggles (EN 166).

**Skin 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 (ppm) Not applicable.
Molar ratio of SiO <sub>2</sub> :K <sub>2</sub> O	>3.9
pH (Value)	Alkaline. 11-13.7
Freezing Point (°C)	Not applicable.
Melting Point (°C)	Not applicable.
Boiling Point (°C)	100
Flash Point (°C) [Closed cup]	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 (g/ml)	1.41 g/cm <sup>3</sup> (20°C), 42.0° Bé, 11.75 lbs/gal
Solubility (Water)	Soluble.
Solubility (Other)	No data.
Partition Coefficient	No data.
Auto Ignition Point (°C)	Not applicable.
Decomposition Temperature (°C)	Not applicable.
Viscosity (mPa. s)	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 residues 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 product(s)**    None known.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

Ingestion	All symptoms of acute toxicity are due to high alkalinity. Material will cause irritation. Oral LD50 (rat) 3400 mg/kg bw
Inhalation	Mist is irritant to the respiratory tract. All symptoms of acute toxicity are due to high alkalinity. Inhalation LC50 (rat) >2.06 g/m <sup>3</sup>
Skin Contact	Material will cause irritation. Dermal LD50 (rat) >5000 mg/kg bw
Eye Contact	Material will cause irritation.
<b>Skin corrosion/irritation</b>	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/d

**Aspiration hazard** Not classified

## 12. ECOLOGICAL INFORMATION

**12.1 Toxicity** Fish (Leuciscus idus) LC50 (48 hour) >146 mg/l Aquatic invertebrates: (Daphnia magna) EC50 (24 hour) >146 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

### 13.1 Waste treatment methods

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.

## 14. TRANSPORT INFORMATION

**14.1 UN number** Not classified according to the United Nations 'Recommendations on the Transport of Dangerous Goods'.  
Not classified as hazardous under DOT or US Transport Recommendations.  
International Maritime Dangerous Goods (IMDG) Code: Not classified as hazardous

**14.2 Proper Shipping Name** Not applicable.

**14.3 Transport hazard class(es)** Not applicable.

**14.4 Packing group** Not applicable.

**14.5 Environmental hazards** Not classified as a Marine Pollutant.

**14.6 Special precautions for user** Unsuitable containers: Aluminium

**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable

## **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.

SARA TITLE III: Not an Extremely Hazardous Substance under §302. Not a Toxic Chemical under §313.

Hazard Categories under §§311/312: Acute

German Water Hazard Classification VwVwS: Product ID number 1314, WGK class 1 (low hazard to water).

HMIS (Hazardous Material Information System) 2,0,0

**15.2 Chemical Safety Assessment** Information available on request.

## **16. OTHER INFORMATION**

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Chemforce gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Chemforce accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.

### **CONTACT NUMBER FOR POISONS CENTRE**

For advice, immediately contact a doctor, ambulance, or, a Poison Information Centre:

Australia 13 11 26 (Australia Wide)

USA - American Association of Poison Control Centres 1-800-222-1222

Canadian Poison Centres – Ontario (24/7): Telephone: 416-813-5900; Toll free: 1-800-268-9017

UK - England and Wales: NHS 111 - dial 111;

Scotland: NHS 24 - dial 111;

Republic of Ireland: 01 809 2166

New Zealand Poisons Centre: 0800 POISON / 0800 764766