

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product Identifier

Product name: Forti-Col™ colloidal silica solution
Synonyms silica sol

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1.2 Uses and uses advised against

Uses Densifying concrete, sealing concrete, concrete curing coating
Restrictions on use For professional / industrial use

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

1.4 Emergency telephone numbers

Emergency +61 (0)417 339927

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Not classified

Classification according to Regulation (EC) No. 1272/2008 (CLP)

Not classified

Classification according to Directive 67/548/EEC and 1999/45/EC (including amendments)

Not classified

2.2 Label elements

Not labelled

Signal Word: Not applicable.

Hazard Pictogram: Not applicable.

Hazard Statement(s): Not applicable.

Precautionary statement(s) Not applicable.

2.3 Other hazards

Precautionary Statement(s): Not applicable

2.4 Unknown acute toxicity (GHS US)

No information available

3. COMPOSITION / INGREDIENTS

INFORMATION ON

Description: Mixture consisting of the following components

Ingredients	% W/W	Cas No.	EINECS No. / REACH Registration	Hazard symbol(s) and hazard statement(s)
Silicone dioxide (SiO ₂) non-crystalline	14 - 21	7631-86-9	231-545-4	NA
Water	79 - 86	7732-18-5	231-791-2	NA

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of the eye & lids with water. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water for several minutes. Remove contaminated clothing. Get medical attention if skin irritation develops or persists.
Inhalation	If inhaled, remove to fresh air. If not breathing, clear person's airway and give artificial respiration. If breathing is difficult, qualified medical personnel may administer oxygen. Get medical attention
Ingestion	If a person is conscious and can swallow, immediately give two glasses of water (16 oz. or 500 ml.) but do not induce vomiting. If vomiting occurs, give fluids again. Do not give anything by mouth to an unconscious or convulsing person. Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Acute or delayed effects are not anticipated.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available

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:

Wear standard full firefighter turn-out gear (full bunker gear) and respiratory protection (SCBA).

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Eye protection and impervious gloves. An approved air-purifying respirator should be worn if dust or mist is present.

6.1.1 For emergency personnel

Wear protective equipment. Keep unprotected persons away

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.

Prevent contact with eyes, skin or clothing.

6.4 Reference to other sections

See Also Sections 8 and 13

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

Keep from freezing. Periods of exposure to high temperatures should be minimized. Provide sufficient ventilation in storage and workrooms. Store in a cool dry area.

7.3 Specific end use(s)

No additional information available. Refer to Section 1.2 of this SDS

8. EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control parameters

8.1.1 National Limit Values Silicon Dioxide, CAS 7631-86-9

Country	Occupational exposure limit	Reference period	Reference
USA	80 mg/m ³ /%SiO ₂	8 hours	OSHA PEL - http://www.cdc.gov/niosh/idlh/7631869.html
UK	6 mg/m ³ (inhalable)	8 hours	Health and Safety Executive http://www.hse.gov.uk/pubns/priced/eh40.pdf
German	4 mg/m ³ (inhalable)	8 hours	Senate Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (MAK Commission): http://www.dfg.de/en/dfg_profile/statutory_bodies/senate/health_hazards/index.html
Belgium	10 mg/m ³	8 hours	Service public fédéral Emploi, Travail et Concentration sociale: http://www.emploi.belgique.be/WorkArea/showcontent.aspx?id=23914
Austria	2 mg/m ³ (inhalable)	8 hours	http://www.arbeitsinspektion.gv.at/NR/rdonlyres/F173280B-D4FB-44D2-8269-8DB2CB1D2078/0/GKV2011.pdf

8.2 Exposure controls

Engineering controls	Ventilation adequate to meet occupational exposure limits.
Hygiene measures	Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be changed and laundered or drycleaned
Respiratory	Airborne concentrations should be kept to lowest levels possible. If vapor, mist or dust is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air supplied respirator after determining the airborne concentration of the contaminant. Air-supplied respirators should always be worn when airborne concentrations of the contaminant or oxygen content is unknown.
Hands	Wear impervious gloves such as neoprene.
Eyes	Safety glasses, chemical type goggles, or face shield recommended to prevent eye contact.
Skin	Wear clean body-covering clothing; impervious gloves such as neoprene. Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.
Environmental exposure controls	Adverse effects of this material on the environment have not been evaluated. Proper disposal techniques to isolate and recover material should be implemented.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Liquid. Clear to translucent or slightly milky..
Odour	Odourless. Odour Threshold (ppm) Not applicable.
pH (Value)	Alkaline. 9>11
Freezing Point (°C)	0 (water based)
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 ³ (20°C), 42.0° Bé, 11.75 lbs/gal
Solubility (Water)	Disperses in water but negligible solubility.
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	Not determined
10.2 Chemical stability	Stable.
10.3 Possibility of hazardous reactions	Hazardous polymerization will not occur..
10.4 Conditions to avoid	No recommendation
10.5 Incompatible materials	Not determined
10.6 Hazardous decomposition product(s)	None known.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Ingestion	All symptoms of acute toxicity are due to high alkalinity. Material will cause irritation. Oral LD50 (rat) 3160 mg/kg bw
Inhalation	Use breathing protection when aerosol or mist is formed. Breathing dried dust or spray mist causes irritation. OSHA exposure limit: Amorphous Silica = 20 mppcf (5 mg/M3) SiO2 respirable dust or mist. 8-hour time weighted average. Exposure analysis method: NIOSH Manual of Analytical Methods, 3rd edition, Method 7501.
Skin Contact	Material will cause irritation. Dermal LD50 (rat) >5000 mg/kg bw
Eye Contact	Avoid contact with eyes, may cause irritation..
Skin corrosion/irritation	Avoid contact with skin, may cause skin irritation or dryness.
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.

12. ECOLOGICAL INFORMATION

12.1 Toxicity	Not harmful to aquatic organisms.
12.2 Persistence and degradability	No further relevant information available.
12.3 Bioaccumulative potential	No further relevant information available
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	No further relevant information available.

13. DISPOSAL CONSIDERATIONS

This information presented only applies to the materials as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

United States: The product is not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

The product is not restricted for transportation.

14.1-14.4 Regulations:

U.S. D.O.T.: Not regulated.

ICAO/IATA: Not regulated.

IMO/IMDG: Not regulated.

ADR: Not regulated

14.5 Environmental Hazards Not an environmental hazard for transport

14.6 Special Precautions for User None

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

Worldwide Chemical Inventories

EINECS (EU): All ingredients listed

TSCA (USA): All ingredients listed

DSL (Canada): All ingredients listed

AICS (Australia): All ingredients listed

ENCS (Japan): All ingredients listed

ECL (Korea): All ingredients listed

PICCS (Philippines): All ingredients listed

IECSC (China): All ingredients listed

Technical Instructions (air): None.

Water hazard class: Based on available data, Silicon Dioxide is not classified as dangerous for the environment according regulation (EC) 1272/2008.

California Proposition 65: No ingredients listed.

SARA Section 311/312 (29 CFR 1910.1200) Hazards: Not classified according to GHS

SARA 313, 304 and CERCLA 102 (A): No ingredients listed

FDA: 21 CFR 175.105 - Silicon Dioxide may be used as a component of adhesives used to prepare articles intended for the use in packaging, transporting or holding food.

21 CFR 177.1200 - Silicon Dioxide may be used as a component of a polymer used as a base sheet or as a coating applied to a base sheet for use in food packaging.

21 CFR 182.90 - Silicon Dioxide is generally recognized as safe (GRAS) as a substance migrating to food from paper and paper board products used in food packaging.

WHMIS: Not controlled.

15.2 Chemical safety assessment:

A chemical safety assessment has not been carried out for silicon dioxide. 1

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