



Designer Concrete DCC Concrete Densifier

Safety Data Sheet according to SWA and ADG requirements:

Re-Issue Date: 10 January 2022

SECTION 1: IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier:

Product Name:	Designer Concrete DCC Concrete Densifier
Product Code:	Not Available
Other means of identification:	Sodium Silicate

Relevant identified uses of the substance or mixture and uses advised against:

Solution mixed with water used to rectify 'concrete surface dusting' occurring upon cast-in-place concrete flatwork slabs and/or to 'densify' the wearing layer surface of concrete slabs affected by water/cement ratio imbalance and a contributory cause of concrete surface weakness and accelerated erosion wear. The product might normally be used in the preparatory stage of the concrete surface prior to installation of concrete resurfacing coating systems.

Details of the supplier of the safety data sheet:

Registered Company Name:	Designer Concrete Coatings Pty Ltd
Address:	19 Liverpool Street, Ingleburn, NSW, 2565, Australia
Telephone:	+61 2 9829 3311
Fax:	+61 2 9829 3544
Website:	www.designerconcrete.com.au
Email:	sales@designerconcrete.com.au

Emergency telephone number:

Association / Organisation:	Not Available
Emergency telephone number:	Australia: (02) 9829 3311 (Business Hours)
Other emergency telephone numbers:	Australia: 000 (24-hours): Poisons Information Centre: 13 11 26.

SECTION 2: HAZARDS IDENTIFICATION

This material is classified as hazardous according to health criteria of Safe Work Australia; and, according to Approved Criteria for Classifying Hazardous substances [NOHSC: 1008 (2004)]
Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (7th Edition).

Signal Word: **Danger**: GHS Pictogram: **Corrosion**:



Hazard Classification:

Skin Corrosion/Irritation: Category 2

Eye Damage/Irritation: Category 1

STOT Single Exposure: Category 3 (respiratory tract irritation).

Hazard Statement(s)

H315 Causes Skin Irritation
H318 Causes Serious Eye Damage.
H335 May Cause Respiratory Irritation.

Precautionary Statement(s) Prevention

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P103 Read label before use
P264 Wash hands, face and all exposed skin thoroughly after handling
P271 Use only outdoors or in a well-ventilated area
P280 Wear protective clothing, gloves, eye / face protection and suitable respirator as required

Precautionary Statement(s) Response

P101 If medical advice is needed, have product container or label on hand
P301+310 If SWALLOWED: Immediately call Poison Centre or doctor/physician
P331 Do NOT induce vomiting
P302+352 If ON SKIN: Wash with soap and water
P303+361+353 If ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower
P304+340 If INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 Call doctor / physician if you feel unwell
P305+351+338 If IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P362 + 363 Remove contaminated clothing /wash before re-use
P337+313 If eye irritation persists seek medical advice / attention

Precautionary Statement(s) Storage

P405 Store locked-up
P403+233 Store in a well ventilated place. Keep container tightly closed.

Precautionary Statement(s) Disposal

Poisons Schedule: Scheduled Poison: Refer to Standard for Uniform Scheduling of Medicines & Poisons (SUSMP).
P501 Dispose of contents / container in accordance with local, regional, national and international regulations

DANGEROUS GOODS CLASSIFICATION:

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"

CLASS: Not Applicable

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Chemical identity of the pure substance: SiO₂/Na₂O: 2.0-3.3; by weight
Common Names / Synonyms: Sodium Silicate
CAS Number: 1344-09-8 (EINECS) 215-687-4
Proportion: 30 – 60%
Non-Hazardous Ingredients (inc water): Balance

SECTION 4: FIRST AID MEASURES

Facilities should be available where this product is used to carry out first aid procedures.

Description of Necessary First Aid Measures:

Inhalation:

Inhalation of vapour / mist / spray from this product may have an immediate or delayed effect to irritate, inflame or sensitise the nose, throat and lungs; and, exacerbate pre-existing conditions such as asthma and bronchitis.

If an irritation occurs, the affected parties should be moved (or move themselves) away from the product or its emissions into a source of fresh air. Prostheses such as false teeth, which may block the airways, should be removed where possible prior to initiating first aid procedures. Professional medical attention should be sought if symptoms persist.

Skin Contact:

Skin contact with this product may lead to immediate or delayed skin irritations and in susceptible people skin sensitisation, dermatitis and/or skin infection.

The affected areas should be washed thoroughly with mild soap and lukewarm water as quickly as possible.

Eye Contact:

In the event that this material comes into contact with the eyes it may have an immediate or delayed irritating effect resulting in redness, watering and/or infection.

Eyes should be immediately and thoroughly flushed with lukewarm water for as long as necessary to alleviate the problem (or for at least 15-minutes). Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Removal of contact lenses after an eye injury should only be conducted. Professional medical assistance should be sought if symptoms persist.

Ingestion:

Swallowing this product may cause immediate or delayed abdominal discomfort and potentially increase the risk of gastro-intestinal infections.

The patient should be given water to drink and medical attention should be sought if any abdominal symptoms occur. Vomiting should not be induced, but if vomiting occurs the patient should be leant forward or placed on their left hand side to maintain an open airway.

Advice for First Aiders:

Refer to Section 7: Precautions for Safe Handling. Contact Poisons Information Centre 131 126 or doctor at once.

Medical Attention:

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES:

Extinguishing Media:**Suitable Extinguishing Media:**

Carbon Dioxide, dry chemical, foam, water fog or water mist.

Specific Hazards / Hazards from Combustible Products:

Non combustible material. However, heating can cause expansion or decomposition leading to violent rupture of containers. In contact with aluminium, tin, lead, zinc, can liberate flammable hydrogen gas which can form explosive mixtures in air. Decomposition temperature not available.

Special Protective Equipment and Precautions for Fire Fighters:

Wear full protective clothing and self-contained breathing apparatus operated in positive pressure mode when fighting fire (as for other material present). Fight fire from a safe location.

Hazchem Code: None Allocated

SECTION 6: ACCIDENTAL RELEASE MEASURES:

Emergency Procedures:

In the event of a spill or release of the product from transport vehicle or storage area in a sensitive environment including near water bodies:

1. Advise the applicable state-based road authority
2. Advise the applicable state-based environment body
3. Advise the product manufacturer/supplier emergency contact: (02) 9829 3311 (Business Hours)

Methods and Materials for Containment and Clean-Up Procedures:

In the event of a spill or release of the product from a transport vehicle or storage area where containment does not exist in order to isolate and clean up:

Secure the site by:

- Covering the spill with an inert absorbent material in order to contain and protect against vapour emissions and gravitational flows into waterways.
- Cover drains to protect against over-ground run-off into waterways, surrounding land and drainage systems. Hi pH value hazardous to aquatic organisms.
- Clean up the spill immediately once the site is secured. Avoid generating vapour.
- Collect the material in suitable marked containers, load, and transport and store all of the material released for use as planned or dispose of safely in a landfill or licensed recovery facility.
- Check the surrounding area to ensure all material has been captured. Collect all material if possible or seek advice from state-based environment body.

Other Advice:

- Wear suitable personal protective equipment and clothing to prevent exposure.
- Increase ventilation if spill occurs in an indoors storage situation.
- Immediately switch off any electrical equipment that may come into contact with the spill.
- Spillage can be slippery. Dries to form glass film which can easily cut skin. When contamination is contained and neutralised, flush area with copious amounts of water and mop up. Do not flush to drains or sewer.

Dangerous Goods – Initial Emergency Response Guide Not Applicable

SECTION 7: HANDLING AND STORAGE:

Precaution(s) for Safe Handling:

This product is hazardous. When handling this material ensure that workers stay away from equipment that is moving and/or processing exposed material and avoid coming into contact with the product by wearing:

- A suitable respiratory protective device conforming to AS/NZS 1715:2009 – Selection, use and maintenance of respiratory protective devices. A Class P1 Particulate Respirator is typically most appropriate.
- Suitable gloves conforming to AS/NZS 2161:2008 – Occupational Protective Gloves. Standard duty leather/pigskin, rubber or neoprene gloves are typically most appropriate.
- Full length protective trousers and shirts (or overalls).
- Suitable boots for the site.
- Suitable eye protection conforming to AS/NZS 1336: 1997 – Recommended practises for occupational eye protection.

Additional Safe Handling Procedures Should Include:

- Limit exposure to the product
- Wash any areas of the body that the product may have come into contact after exposure.
- Regularly vacuum enclosed areas where the product is used or install a vapour extraction system.
- When handling this material ensure the environment is protected from releases by weather conditions such as wind and rain.
- As with all vapour generating materials, ensure adequate ventilation against the relevant exposure standards (Section 8) and also to prevent the spread of vapours into the workplace environment that may risk the health and safety of others.
- Shower and change after completion of product use for its intended purpose.
- Wash hands and face after handling and after completion of product use for its intended purpose.

Conditions for Safe Storage:

When storing this material:

- Store in closed containers and in well ventilated areas to prevent vapour release & exposure to the product. Store away from incompatible materials.
- Storage Temperatures: 0°C to 95°C. Avoid freezing.
- Loading Temperature: 45°C to 95°C
- The product is packaged in recommended plastic material containers. Do not re-dispense or store in containers comprising of (or allow contact with) aluminium, fibreglass, tin, lead, zinc, copper, brass, or galvanised materials.

This material is **NOT classified as a Dangerous Good** under the criteria of Australian Dangerous Goods Code.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION:

National Exposure Standards:

No specific exposure standards have been allocated. However due to vapour emission inherent in the product, concentrations for monitoring exposure should be observed and precautionary Standards as listed below:

Control Parameters:

	TWA ¹		STEL ²	
	ppm	mg/m3	ppm	mg/m3
Total Inhalable Dust	-	10	-	-
National Health and Safety Commission, 2004				

¹Time Weighted Average concentration

²Short-Term Exposure Limit.

These exposure guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentration of dust/vapour. They are not a measure of relative toxicity. If the direction for use stated on the product label is followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers' routinely, potentially exposed during product manufacture.

Total Respiratory Dust:

2mg/m³ (American Conference of Government Occupational Hygienists, 1986)

Biological Limit Values:

As per the "National Model Regulations for the Control of Workplace Hazardous Substances (Safe Work Australia)" the ingredients in this material do not have a Biological Limit Allocated.

Engineering Controls:

Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use with local exhaust ventilation or while wearing appropriate respirator. DO NOT enter confined spaces where inhalable vapour may have collected

Exposure Controls:

Personal Protection Equipment (PPE).

G: OVERALL; SAFETY SHOES; SAFETY GLASSES; GLOVES; RESPIRATOR.

PPE: Where engineering controls are not installed to limit airborne exposure, refer to AS/NZS 1715: Selection, use and maintenance of respiratory protective devices; and, AS/NZS 1716: Respiratory Protective Devices. Heavy duty protective suit, gloves (AS/NZS 2161:2008) and foot wear (AS/NZS 2210.5: 2009). Eye protection should conform to AS/NZS 1337: Eye Protectors for Industrial Applications

Hygiene Measures:

Keep away from foodstuffs, drink and animal foodstuffs & feeding troughs. When using the material, do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid skin and eye contact and inhalation of dust. Ensure that eyewash stations and safety showers are close to the workstation location.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES:

Property	Unit of Measurement	Typical Value
Appearance	Not Applicable	Clear to hazy-coloured liquid
Odour	Not Applicable	Odourless
Solubility	Not Applicable	soluble in water
Vapour Pressure @ 25°C	kPa	Not Available
Boiling Point	°C	105 - 108
% Volatile by Volume	%	30 - 60
Melting Point / Range	°C	0 (approximately)

Auto Ignition Temperature	°C	Not Applicable
Decomposition Point	°C	Not Available
Flash Point	°C	Not Applicable
Specific Gravity	-	1.2 – 1.7
Flammability	-	None Combustible Material
Viscosity (Kinematic & Dynamic)	-	Not Available
pH	-	11 – 13
Other Information		Corrosive to aluminium, copper, tin, zinc and lead

SECTION 10: STABILITY AND REACTIVITY

Reactivity:

Corrosive to aluminium, copper, tin, zinc & lead.

Chemical Stability:

This material is stable when stored and used in accordance with this Safety Data Sheet and directions on the product label. Absorbs carbon dioxide from the air. Reacts with carbon dioxide to form silica.

Conditions to Avoid:

Extremes of temperature and direct sunlight. Protect from freezing. Carbon dioxide.

Incompatible Materials:

Strong acids. Corrosive to aluminium, copper, tin, zinc and lead.

Hazardous Decomposition Products:

Thermal decomposition may result in the release of toxic and/or irritating fumes including sodium silicate.

Hazardous Reactions:

Reacts with incompatible materials. Reacts with ammonium salts to form ammonia. In contact with aluminium, copper, zinc can liberate flammable hydrogen gas which can form explosive mixtures in air.

Hazardous Polymerisation:

Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION:

Acute Toxicity – Oral:

LD50 (rat) : >2000mg/kg

Acute Health Effects:

Ingestion:

Ingestion is unlikely through normal use. However, swallowing any amount of this product may cause immediate or delayed abdominal discomfort causing nausea and vomiting.

It is not recommended to repeatedly swallow this product.

Eye Contact:

In the event that any dose of this material or vapour comes into contact with the eyes it may have an immediate or delayed irritating effect resulting in stinging, blurring and watering and other serious eye damage effects.

It is not recommended to repeatedly allow this material to come into contact with the eyes.

Skin Contact:

Any level of skin contact with this product may lead to immediate or delayed skin irritations and in susceptible people with sensitive skin, dermatitis or skin infection.

Primary Dermal Irritation Index (PDII) 3: Abraded Skin.

Primary Dermal Irritation Index (PDII) 0: Intact Skin

It is not recommended for people susceptible to skin irritations to repeatedly allow this material to come into contact with the skin. Human experience confirms that irritation occurs when this material gets on clothes at the collar, cuffs or other areas where abrasion may occur

Inhalation:

Inhalation of large amounts of vapour/mists from this product may have an immediate or delayed effect to irritate, inflame or sensitise the nose, throat and lungs, and exacerbate pre-existing conditions such as asthma and bronchitis

It is not recommended for people to repeatedly inhale this material.

Respiratory Sensitisation:

Not expected to be a respiratory sensitiser.

Skin Sensitisation:

Not expected to be a skin sensitiser.

Chronic Health Effects:

The repeated inhalation of vapour/mists from this product may lead to respiratory irritation, inflammation or sensitisation in persons with pre-existing illness such as asthma and bronchitis. Repeated contact with eyes can cause serious eye damage. Repeated contact with skin can lead to dermatitis or skin infections.

Contact with this product outside of intended use is not recommended.

Germ Cell Mutagenicity:

Not considered to be a mutagenic hazard. Sodium silicate: Not mutagenic in bacteria (*Escherichia coli*).

Carcinogenicity:

Not considered to be a carcinogenic hazard.

Reproductive Toxicity:

Not considered to be toxic to reproduction.

Sodium Silicate: Species: (Rat).

Exposure Routes: Oral (drinking water). Dose Levels: 600, 1200ppm.

Result: Decreased numbers of births and survival to weaning.

STOT – Single Exposure:

May cause respiratory irritation.

STOT – Repeated Exposure:

Not expected to cause toxicity to a specific target organ.

Aspiration Hazard:

Not expected to be an aspiration hazard.

Other Information:

Sodium Silicate: Species: (Rat).

Exposure Routes: Oral (drinking water).

Exposure Duration: 3 Month/s.

Dose Levels: 200, 600, 1800ppm

Result: Altered Blood Chemistry.

Species: (Rat); (Dog).

Exposure Routes: Oral.

Dose Levels: 2.4g/kg/d. Exposure Duration: 4-weeks.

Result: Tests on animal have revealed changes in the following organs/tissue: Kidney (dog); no adverse systemic effects (rat). Frequent ingestion over extended periods of time of gram quantities of silicates is associated with the formation of kidney stones and other siliceous urinary calculi in humans.

SECTION 12: ECOLOGICAL INFORMATION:

Acute Aquatic Hazard – Fish:

Sodium Silicate: Median Tolerance Level (TL50): 2320ppm/96h/Gambusia affinis.

Acute Aquatic Hazard – Daphnia:

Sodium Silicate: Median Tolerance Level (TL50): 247ppm/96h/water flea.

Acute Aquatic Hazard – Other Organisms:

Sodium Silicate: Median Tolerance Level (TL50): 632ppm/96h/Snail eggs (Lymnea)

Sodium Silicate: Median Tolerance Level (TL50): 160ppm/96h/Amphipoda.

Ecotoxicity:

Soluble in water. Substance sinks in water.

Persistence and Degradability:

Not expected to be persistent. A high pH-value harms aquatic organisms. Soluble silicates, upon dilution, rapidly depolymerise into molecular species indistinguishable from natural dissolved silica. It does not contribute to BOD.

Bioaccumulation Potential:

This material does not bioaccumulate except in species that use silica as a structural material such as diatoms and siliceous sponges. Neither silica nor sodium will appreciably bioconcentrate up the food chain.

Mobility:

Mobile in soil. Soluble silicates, upon dilution, rapidly depolymerise into molecular species indistinguishable from natural dissolved silica.

SECTION 12: ECOLOGICAL INFORMATION – Cont:**Environment Protection:**

Prevent this material entering waterways, drains and sewers.

Other Adverse Effects:

Not available.

SECTION 13: DISPOSAL CONSIDERATIONS:

Disposal Methods: The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.

Special Precautions for Landfill or Incineration: Refer to Section 12: Ecological Information: Refer to applicable local and national guidelines: Sodium Silicate.

SECTION 14: TRANSPORT INFORMATION:

Road & Rail Transport:

Not classified as Dangerous Goods by criteria of the Australian Code for the Transport of Dangerous Goods by Road and Rail(7th Edition) and the New Zealand NZS5433: Transport of Dangerous Goods on Land.

UN No:	None Allocated
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Proper Shipping Name:	None Allocated
DG Class:	Not Applicable
Subsidiary Risk:	Not Applicable
Packaging Group:	Not Applicable
Hazchem Code:	Not Applicable
Initial Emergency Response Guide:	Not Applicable

Precautionary Measures: Not to be loaded with explosives (Class 4); Flammable gasses (Class 2.1), if both are in bulk: Toxic gasses (Class 2.3); Spontaneous combustible substances (Class 4.2); Oxidising agents (Class 5.1); Organic peroxides (Class 5.2); or, Radioactive substances (Class 7) albeit some exemptions may apply.

Other Special Storage or Transport Information: Transport in covered container and avoid exposure to direct sunlight and exposure to conditions where the product may freeze.

Marine Transport:

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code. The product is not considered a marine pollutant.

UN No:	None Allocated
Proper Shipping Name:	None Allocated
DG Class:	Not Applicable
Packaging Group:	Not Applicable

Air Transport:

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for Transport by Air.

UN No:	None Allocated
Proper Shipping Name:	None Allocated
DG Class:	Not Applicable
Packaging Group:	Not Applicable

SECTION 15: REGULATORY INFORMATION:

Classified as **Hazardous** according to the Globally Harmonised System of classification and labelling of chemicals (GHS) including Safe Work Australia classifications.

Classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Poisons Schedule: S5

SECTION 16: OTHER INFORMATION:

Revision Requirement: Re-issue 10 Jan. 22

Information updates of all sections to comply with Code of Practice Safe Work Australia December 2011.

Abbreviations:

ADG: Australian Code for Transport of Dangerous Goods by Road and Rail.

CAS Number: Chemical Abstracts Number.

HMIS: Hazardous Materials Identification System.

TWA: Time - Weighted Average airborne concentration over an 8-hour working day, for 5-day working week over an entire working life.

STEL: Short-Term Exposure Limit; the average airborne concentration over a 15-minute period which should NOT be exceeded at any time during a normal 8-hour working day.

LD50: Lethal Dose, 50% / Median Lethal Dose.

ppm: Parts Per Million.

STOT-RE: Specific Target Organ Toxicity (Repeated Exposure).

STOT-SE: Specific Target Organ Toxicity (Single Exposure)

SUSMP: Standard for the Uniform Scheduling of Medicines and Poisons.

SWA: Safe Work Australia.

GHS: Globally Harmonised System.

Disclaimer:

This Safety Data Sheet (SDS) has been prepared to the best belief of the manufacturer as to its accuracy and reliability as at the date of issue. No warranty expressed or implied is made as to its full reliability or completeness but is considered the appropriate information required by the user in the context of how the product must be handled and used in the workplace and including in conjunction with other products or materials present. Since the manufacturer cannot anticipate or control the conditions under which this information may or will be used, it is the user's responsibility to determine the safety, risk and fitness-for-purpose of the product under the conditions and environment where the product is intended to be used; and, responsibility to ensure that the SDS issue date is current. This information given is a non-controlled document and Designer Concrete Coatings Pty Ltd shall not be liable for personal injury or property damage associated with use or misuse of the product.