

### Product Description

ARMADILLO COLLOIDAL is a water based, 100% colloidal silica dispersion for the densifier of concrete. Of all the densifier types, the colloidal silicas have the smallest molecule size, allowing the best possible penetration of tight (low porosity) concrete surfaces such as polished concrete. With a particular size of 12 microns, it provides a superior densifier result, providing a stronger, higher concrete surface.

The densifier concrete surface provides substantial reduced water penetration. It also prevents rubber marking from vehicle tyres.

### 100% Colloidal Silica Dispersion Provides High Possible Penetration and Densification Result

#### USE:

It can be used on new and old concrete slabs to densify the concrete surface and reinforce the concrete slab. It can be used at time of pour but generally is applied after the removal of the curing compound or at the commencement of the concrete polishing process.

### Advantages of Use

- Water Based
- Zero VOC
- Complies with GREEN STAR- OFFICE DESIGN V3 IEQ-13
- Improved concrete curing
- Improved waterproofing and stain resistance

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### DIRECTIONS FOR USE :

ARMADILLO COLLOIDAL spray onto concrete using an airless spray unit. Keep the surface wet for at least 15 minutes, brooming pooled excess surface liquid onto drier areas and adding additional Armadillo product if needed to maintain dampness. After 1 hour using a squeegee to remove any excess material from the surface.

With regards to OH&S, extra care must be taken when moving around on the surface due to the slippery nature of the coating.

**LIMITATIONS:** While the densification process vastly reduces water penetrating, a penetrating sealer is recommended to provide full stain protection of the surface.

**COVERAGE:** ~5 m<sup>2</sup> per litre (0.2L/m<sup>2</sup>) as supplied

**CLEAN UP:** Water cleanup

**STORAGE:** Store in cool, dry conditions, away from sources of heat and naked flames, in original, unopened packs. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

**PACKS:** 20L, 200L, 1000L

### OTHER DENSIFIER OPTIONS:

- Eliminates dusting of concrete surfaces
- Increase abrasion resistance to the concrete surface
- Over trade compatible



Chemical House offers a full range of concrete densification options including:

EP3024 Densifier - Sodium Silicate

Armadillo D (Dustproof) – Potassium Silicate

Armadillo K – Potassium Silicate

Armadillo K (HS) – High Solids Potassium Silicate

Armadillo LK – Lithium/Potassium Silicate Blend

Armadillo L Nano – Lithium Silicate

Armadillo Colloidal – Colloidal Silica

For more information on these products and other concrete admixtures, please refer to our website at [www.chemicalhouse.com.au](http://www.chemicalhouse.com.au)

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# Armadillo Colloidal

Colloidal Silica Premium Concrete Densifier

**Product  
Brochure**

**Product Brochure**

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### Product Method Statement (disclaimer)

This Product Data Sheet (PDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time. You should read this PDS carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Chemical House does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.

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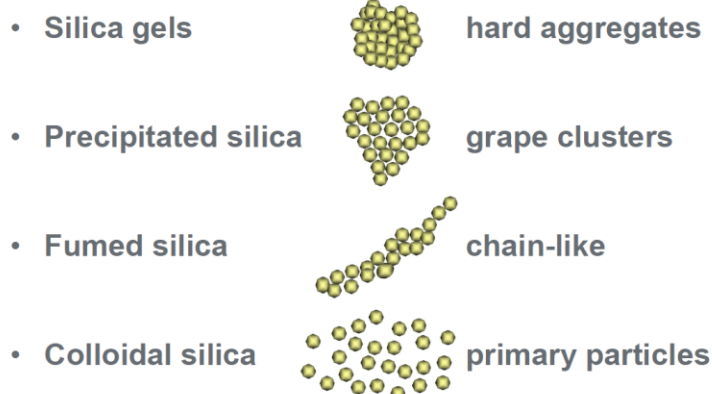
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Colloidal Silica densifiers have the smallest particular size in the concrete densifier product category. This is not the molecule size, but the agglomerated macro particle size (ie lithium silicate is a larger molecular than potassium silicate but the agglomerate size in the solution is much smaller). As the diagram above displays, the colloidal solution is a evenly distributed dispersion of individual particles and much finer again than traditional alkaline metal silicates (sodium/potassium/lithium silicate) clusters.

#### Four Types of Synthetic Amorphous\* Silica



In order of particular size (and cost):

Sodium silicates → Potassium silicates → Lithium Silicates → Colloidal silica (particle size 6-12 nm)

Even though sodium silicates and colloidal silicates share similar raw materials (salt + sodium hydroxide), the final particle sizes depends on the polymerization of the submolecules in the reaction chemistry. In the production of the Armadillo Colloidal product, sodium silicate an intermediary product and used a feedstock for further reaction to create the final colloidal silica product. The silica gels commons known as “sodium silicates” in densifier terms are a larger agglomerates macro molecular approximately 500 microns in size. Colloidal silica used in the Armadillo densifier molecule size ranges between 6-16 micron, with an average of 12 um.

Armadillo Colloidal has been formulated to be similar to the other major colloidal densifier products on the market with similar pH, solids and performance

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### Specification Clause

The coating should be applied (undiluted) in a single coat at the specified rate of 5m/L ( 0.2L/m<sup>2</sup>) to achieve a film thickness to achieve the correct densification properties.

ARMADILLO COLLOIDAL must be applied on to the substrate at the coverage rates recommended as a minimum specification. The surface must be keep wet with ARMADILLO product for at least 15 minutes after application. If specified at higher rates then ensure that after sufficient time has passed for soakage/penetration, any excess material is removed to the surface before it dries.

All designated areas are to have a densifier compound applied to the freshly finished concrete. The curing compound will be a colloidal silica dispersion. Such a material is ARMADILLO COLLOIDAL as supplied by Chemical House. The densifier compound is to be applied in accordance with the manufacturers application instructions.

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**PRODUCT:**

## ARMADILLO COLLOIDAL

PRODUCT TYPE ACCORDING TO :

GREEN STAR- OFFICE DESIGN V3 IEQ-13

GREEN STAR- OFFICE INTERIORS V3 IEQ-11

SCAQMD PRODUCT TYPE:

### ARCHITECTURAL PAINT, SEALANT

Unless otherwise stated, the TVOC of this product has been calculated theoretically, based on the known VOC values of the individual raw material components. In the event that the VOC level of any individual raw material component is unknown, the TVOC has been determined experimentally using SCAQMD Method 304-91, as referenced by South Coast Air Quality Management District (SCAQMD) Rule 1168.

Paint specified	TVOC	TVOC limit	Compliant? [Y/N]
ARMADILLO COLLOIDAL	0g/L	250g/L	Y

Signed:



Michael Scuderi BE(Chem)

Technical Services

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