

## PRODUCT INFORMATION

### **SOLID SILANE SS801**

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Manufacturer's Code: RPSS801

Updated: 01/01/2022

**Product Name:** SOLID SILANE SS801

**Description:** SOLID SILANE SS801 is an innovative aqueous thixotropic silane cream that contains over 80% octyltriethoxysilane and siloxane. The product is specially designed as a high quality water repellent treatment in the protection of concrete structures against water and chloride ion ingress. The silane cream technology overcomes the main problems associated with liquid silane or siloxane products that often run off the surface causing product wastage and environmental contamination. Commonly used liquid silane treatments such as iso-butyltriethoxysilane can easily evaporate during the application and curing stages resulting in further loss of product. In addition, evidence shows that the long carbon chain octyltriethoxysilane used in the silane cream provides better alkali stability than that of the shorter chain iso-butyltriethoxysilane thus ensuring the long-term durable protection is provided to the concrete. Furthermore, the silane cream generally requires only one coat application resulting in savings in both material and labour costs. While the liquid silane or siloxane products normally require multiple applications in order to achieve a satisfactory impregnation performance.

**Recommended Uses:** SOLID SILANE SS801 is used in the treatment of concrete infrastructures such as roads, bridges, wharves or other concrete substrates to prevent water and chloride ion induced reinforcement corrosion. The product can also be used as a coating primer to significantly increase the durability of the concrete coating system. The silane cream can be re-applied to the treated concrete surface that may be previously treated with either a silane cream or a liquid silane or siloxane product.

Some of the important features and benefits of SOLID SILANE SS801 include:

- Innovative aqueous thixotropic cream technology with high active silane.
- One coat of application can achieve deeper impregnation depth.
- Suitable for horizontal, vertical and overhead surfaces without run off or evaporation.
- Easy quality control by a wet film gauge.
- Siloxane bonding to concrete resulting in durable long-term protection.
- UV, alkali and weathering stable.
- Significantly reduces water and chloride ion absorption.
- No significantly change in surface appearance and vapour permeability.
- Environmentally-friendly water-based non-toxic formulation.

**Use Instructions:** Before Application

Please read and fully understand the product data sheet before use. Follow the related specifications and/or local industrial standards for application.

New concrete should be cured for 28 days before applying the product. The concrete surface should be cleaned of any dust by sweeping or using compressed air. Old concrete should be completely cleaned before application using superheated steam or high-pressure water jet together with a suitable cleaning agent such as alkaline detergent to remove soils, grease, or any other residues. Any curing compounds or surface coatings should be completely stripped off before applying the silane cream.

Prior to application, the concrete surface should be washed and left to dry for up to 24 hours under good weathering conditions. A simple way to judge the surface moisture level is that there is no damp patches visible on the surface. The moisture content in the surface zone to a depth of 20mm may be measured using a suitable technique or equipment to a level not to exceed 4% by weight.

Application process

Silane cream is preferably applied by an airless sprayer. The spray equipment should be operated at a lower pressure with a large spray nozzle. This is to avoid the cream from liquefying caused by high shearing as the cream passes through the spray nozzle. For small areas, the silane cream may be applied by brush or roller, or by another method. Do not over spray the product onto any areas you don't want to treat. If this does occur, remove the product immediately with a dry clean cloth.

For general purpose concrete protection, only one application coat is needed. A second coat in some cases may be required although it is usually unnecessary. After application, the silane cream will slowly liquefy to a gel-like liquid silane that is gradually absorbed by the surface. Depending on the atmospheric conditions, this process may take approximately 30 to 60 minutes. After the cream has fully absorbed by the concrete, the surface will remain dark for a few days before returning to its original concrete colour. Initial water repellent effect (or beading effect) will develop after the surface is dry, however full curing may take up to 7 days or more. Avoid heavy traffic or rain for 24 hours. Wash all equipment in water. In the event of unexpected rain or other interferences, the treated surface should be protected for up to 24 hours.

#### Application rate

Depending on concrete and atmospheric conditions, the application rate of SOLID SILANE SS801 may vary from 100g to 300g per square meter per coat. A typical rate at 200g/sqm (or approximately 220 microns of a wet film thickness) in one application is usually sufficient for treating concrete with the strength of up to 50MPa. At 200g/sqm, SOLID SILANE SS801 can achieve an average minimum 4 mm impregnation depth that is sufficient to provide durable protection against water and chloride ion ingress.

A more precise application rate may be determined where the amount of cream applied onto a surface liquefies to a gel-like liquid silane that then slowly absorbs into the surface before the liquid silane starts to run off the surface. For a very dense surface, a lower application rate is recommended to avoid silane running off the surface. In this case, a second coat may be required in order to achieve an adequate impregnation depth although it may not be necessary. A test is recommended to decide if the second coat is required for the purpose.

#### Pilot test and quality control

Due to the variation of the substrate, it is strongly recommended that a pilot test on a small area on site should be conducted prior to application to determine the right application technique to be used and the suitable application rate required. Wet film thickness of the cream should be controlled by a wet film gauge during the application to ensure the correct amount of silane cream is uniformly applied over the entire surface. Refer to Use Specifications of Solid Silane SS801 for further details.

#### Further information

Tech-Dry silane cream meets the requirements of most specifications or standards for concrete protection by silanes. Refer to the technical reports of Tech-Dry silane cream for further details.

#### **Typical Data:**

|                      |                   |
|----------------------|-------------------|
| Appearance:          | White Cream       |
| Active contents:     | >80%              |
| Specific Gravity:    | 0.9 g/ml at 20 °C |
| pH value:            | 7-8               |
| Solubility in water: | miscible in water |
| VOC content:         | <20g/litre        |
| Flash point:         | >61°C             |

#### **Important Note:**

SOLID SILANE SS801 penetrates into the capillaries and renders the concrete surface hydrophobic while still allowing the open capillaries to breathe. The hydrophobic surface significantly reduces water absorption of the concrete. However it may have limited resistance to water penetration particularly under prolonged contact or hydrostatic pressure. Therefore, in some cases where the concrete is very permeable or under extreme wind driven rain, resistance to water penetration or harmful salts such as chloride ions may not be adequate.

#### **Handling & Storage:**

SOLID SILANE SS801 is a non-hazardous material. However, as with all chemical products, good industrial hygiene procedures should be followed when using this product. Please refer to the material safety data sheet for safe handling. Vapour inhalation and skin or eye contact should be avoided by wearing proper protection. Wear an air-purifying respirator if there is a risk of exposure to high vapour concentrations. Wash hands after handling. The product should be stored in closed containers in a cool dry place away from any fire and ignition sources. The product has a shelf life of 6 months in a sealed original container under 25°C.

**USE UNDER SUFFICIENT VENTILATION AWAY FROM ANY FIRE OR IGNITION SOURCES!**

**KEEP OUT OF REACH OF CHILDREN!**

#### **Packaging:**

SOLID SILANE SS801 is available in 5 and 20 litre plastic drums. Other sized containers are available on request.

#### **Disclaimer:**

The information given in this data sheet is based on many years of experience and is correct to the best of our knowledge. As the storage, handling and application of this material are beyond our control; we can only be responsible for the quality of our product at the time of dispatch. We reserve the right to alter certain product parameters within the spectrum of properties in order to keep abreast of technical advances. It is the responsibility of the end user to determine the suitability of this material for any particular application.