

Technical Data Sheet

Protectosil® WS 410

Aqueous emulsion based on organofunctional silanes

PRODUCT DESCRIPTION

Aqueous emulsion based on organofunctional silanes for the water repellent impregnation of absorbent, mineral substrates

Typical Properties

Property	Unit	Value
Active Content	%	50
Appearance		milky white liquid
Density DIN 51757 (@20 °C)	g/cm ³	0.94
Flash Point, min. DIN EN ISO 2719	°C	>63
Viscosity DIN 53015 (@20 °C)	mPa·s	0.95

The data represents typical values (no product specification)

Registration Listings

Registry	Status
Australia (AICIS)	Information upon request
Canada (DSL)	Information upon request
China (IECSC)	Information upon request
EU (REACH)	Yes
EU (EINECS/ELINCS)	Yes
Japan (ENCS)	Yes
Korea (KECL)	Yes
Philippines (PICCS)	Yes
USA (TSCA)	Yes

TYPICAL APPLICATIONS

Protectosil® WS 410 is suited for the water repellent impregnation of absorbent, mineral substrates.

Suitable substrates:

- concrete
- clay bricks
- clay roof tiles
- clinker masonry
- sand limestone
- others

BENEFITS & ADVANTAGES

Protectosil® WS 410

- provides significant reduction of water uptake
- shows very high reactivity and resistance against alkali
- penetrates deeply in porous, mineral substrates
- shows no formation of sticky silicone films
- gives invisible and water vapor permeable protection
- reduces the uptake of water-soluble pollutants (e.g. chlorides)
- effective on micro cracks up to 0.3 mm
- meant to be diluted with water before use

DOSAGE

For most applications a dilution of 1:9 - 1:1 of the product in demineralized water is recommended. The amount of Protectosil® WS 410 to be applied and the concentration to be used are highly depending on the absorbency of the substrate and the desired penetration depth.

Very absorbent substrates may require up to 500 – 1000 g/m² Protectosil® WS 410 (1:9 dilution in water). To determine the exact amount to be applied and to check whether previous or following treatments are compatible with the Protectosil® WS 410 treatment it is recommended to do a small test patch first.

Suitable substrates	Approx. consumption	Dilution in water	Mode of application
Concrete	min. 200 g/m ²	1:1.5	Airless spraying
Clinker masonry	min. 240 g/m ²	1:4	Airless spraying
Sand limestone	min. 250 g/m ²	1:1.5	Airless spraying
Roof tiles	min. 300 g/m ²	1:4	Airless spraying or immersion

Gently stir the product before preparing the dilution. Protectosil® WS 410 should be applied by wet-on-wet flow coating to the saturation point. The solution should be applied in 2 - 3 coats without drying between the coats as the water repellent effect of Protectosil® WS 410 can develop within minutes. On vertical surfaces the solution should run down in the form of a clearly visible descending wet curtain. This is achieved by allowing the solution to flow against the surface of the building material without pressure.

HANDLING & PROCESSING

Substrates to be treated should be dry and clean. Acceptable surface cleaning methods include sandblasting and water blasting. Most liquid delivery devices (e.g. airless spraying equipment) are suitable. The material should not be atomized or applied with a brush. Due to its high water content Protectosil® WS 410 is frost-sensitive and should therefore not be used at temperatures below 0 °C. The ideal temperature range for the application is 4 °C to 40 °C.

Do not apply if rain is expected or if high winds or other ambient conditions prevent proper application. A substrate that has already been made water repellent cannot be treated with Protectosil® WS 410 as it no longer allows penetration of a water-based silane/siloxane emulsion. In such cases a pure silane or solvent based system such as Protectosil® BHN or Protectosil® 009 can be used.

Non-absorbent substrates such as window frames, window sills, plastic fittings, window glass, etc., should be covered before application. Surfaces which accidentally come into contact with Protectosil® WS 410 can be cleaned with alcohol (spirit) or aqueous soap solutions. Cleaning should be carried out as quickly as possible (within a few hours), otherwise formation of a silicone resin film can make cleaning more difficult. Silicone resin films are best removed using ethanol (or spirit).

Plant life should be protected against overspray.

SAFETY

Before considering the use of Protectosil® products please read its Safety Data Sheet (SDS) thoroughly for safety and toxicological data as well as for information on proper transportation, storage and use. The Safety Data Sheet is available on our website <https://www.evonik.com/en/company/businesslines/se.html> or upon request from your local representative, customer service or from Evonik Operations GmbH, Product Safety Department, E-MAIL sds-hu@evonik.com.

PACKAGING

Protectosil® WS 410 is supplied in 1000 l IBCs. Pails (25 kg) and drums (200 kg) are available as make to order.

STORAGE

The product should be stored at temperatures between 3 °C and 40 °C.

SHELF LIFE

The product has a shelf life of at least 12 months if stored in originally sealed containers.


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Evonik Operations GmbH, 79618 Rheinfelden 21
1119-CPR-0715 EN 1504-2
Protectosil® WS 410 Hydrophobizing Impregnation
Storage conditions: +5°C up to +40°C; containers must be kept tightly sealed and protected from moisture; shelf life of closed containers 12 months
Penetration depth: Class I < 10mm
Water absorption and alkali stability: Absorption coefficient < 7,5 %, compared to the non treated sample
Absorption coefficient < 10 %, after storage in alkali solution
Drying speed for hydrophobizing Impregnation: Class I: > 30%
Harmful substances: In accordance with 5.4

Disclaimer

This information and all further technical advice are based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third-party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

Evonik Operations GmbH
Smart Effects
Rodenbacher Chaussee 4
63457 Hanau
Germany
ask-se@evonik.com
ask-se-asia@evonik.com
ask-se-americas@evonik.com
www.evonik.com/smarteffects