

Protectosil® WS 405

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

Technical Data

Properties and test methods	Value	Unit	Method
Density (20 °C)	approx. 0,94	g/cm ³	DIN 51757
Appearance	white liquid	-	-
Flash point	72	°C	EN 22719
Viscosity (20 °C)	approx. 15	mPa·s	DIN 53015
Active ingredient	50	%	-
pH-value (20 °C)	6 - 8	-	-

Registration

Protectosil® WS 405

EINECS/ELINCS (EU):	Yes
AICS (Australia):	No
DSL/NDSL (Canada):	No
PICCS (Philippines):	Yes
TSCA (USA):	No
IECSC (P.R. China):	Yes
ENCS (Japan):	No
ECL (South Korea):	Yes

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Safety and Handling

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 after registration on our website www.protectosil.com or upon request from your local representative, customer service or from Evonik Resource Efficiency GmbH, Product Safety Department, E-MAIL sds-hu@evonik.com.

Packaging and Storage

Protectosil® WS 405 has a shelf life of 12 months when stored in originally sealed containers.

Storage temperatures are between 3 °C and 40 °C.

Protectosil® WS 405 is available in 25 l and 200 l drums and 1.000 l containers.

Properties and Use

Protectosil® WS 405

- is suited for the water repellent impregnation of porous, mineral substrates
- 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 significantly the uptake of water
- reduces the uptake of water soluble pollutants (e.g. chlorides)
- effective on micro cracks up to 0,3 mm
- may be further diluted with water

For most applications a concentration of from 5% (1 part Protectosil® WS 405, 9 parts of water) to 20% (1 part of Protectosil® WS 405, 1,5 parts of water) of the active ingredient in demineralized water is recommended. The product should be shaken well before use. The amount of Protectosil® WS 405 to be applied and the concentration to be used are highly depending on the absorbance of the substrate and the desired penetration depth. Very absorbent substrates may require up to 1 l/m² of Protectosil® WS 405.

The substrates to be treated should be dry and clean. Acceptable surface cleaning methods include sandblasting and water blasting.

During application outside temperatures and surfaces temperatures should be between 5 °C and 40 °C. Protectosil® WS 405 should not be applied during strong wind or rain.

Protectosil® WS 405 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. 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. Most liquid delivery devices e.g. airless pumping equipment are suitable. The material should not be atomized or applied with a brush.

The water repellent effect of Protectosil® WS 405 can develop within minutes or require up to several days depending on the substrate and weather conditions. Therefore, the impregnation should be applied continuously and without a break to avoid overlapping.

The impregnation of delaminations should not be done with Protectosil® WS 405. Protectosil® BHN or Protectosil® 40 S are better suited for this purpose. A substrate which has already been made waterrepellent no longer allows a penetration of any reapplied aqueous silane/siloxane emulsion.

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 405 can be cleaned with alcohol (spirit) or aqueous soap solution. 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 from overspray.

Protectosil® WS 405 reacts with the interfaces in pores and capillaries of the mineral surface and forms invisible, waterrepellent interfacial compounds. To determine the exact amount to be applied and to check whether previous or following treatments are compatible with the Protectosil® WS 405 treatment it is recommended to do a small test patch first.

 1119
Evonik Industries AG, 79618 Rheinfelden 06
1119-CPRL-0715 EN 1504-2 Protectosil® WS 405 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: < 10 mm
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

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