

Protectosil® BHN

Water repellent impregnation for concrete, clinker masonry, and ceramic tiles. Protection of mineral surfaces against the ingress of water and water soluble pollutants.

Technical Data

Properties and test methods	Value	Unit	Method
Active Solids	100	%	
Solvent	solvent free		
Flash Point	145.4	°F	
Density	7.3	lbs/gal	
VOC	400	g/l	
Color	water white		
Active Substance	alkyltrialkoxysilane		

Registration

Protectosil® BHN

DSL/NDSL (Canada):	Yes
PICCS (Philippines):	Yes
TSCA (USA):	Yes
IECS (P.R. China):	Yes
ENCS (Japan):	Yes
ECL (South Korea):	Yes
EINECS/ELINCS (EU):	Yes
AICS (Australia):	Yes

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Safety and Handling

Before considering the use of Protectosil® products please read its Material Safety Data sheet (MSDS) thoroughly for safety and toxicological data as well as for information on proper transportation, storage and use. The Material Safety Data Sheet is available after registration on our website www.dynasylan.com or upon request from your local representative, customer service or from Evonik Industries AG, Product Safety Department, E-MAIL sds-im@evonik.com.

Packaging and Storage

Protectosil® BHN is supplied in 25 l, 200 l as well as in 900 l container. **Protectosil® BHN** should not come into contact with moisture. The material should be stored at temperatures between -10 °C und 40 °C. **Protectosil® BHN** has a shelf life of at least 12 months when stored in originally sealed containers.

Properties and Use

- clear, colorless, frost resistant liquid based on a monomeric alkyltrialkoxysilane
- solvent free, > 98% active ingredient
- flash point 63 °C
- low volatility
- not miscible with water
- viscosity (20° C) < 2 mPa.s

Protectosil® BHN

- is specially suited for the waterrepellent impregnation of mineral construction materials in outdoor areas
- is highly reactive and resistant against alkaline environment
- reaches very high penetration depth
- generates water vapour permeable, colorless impregnation
- reduces significantly the uptake of water and soluble salts (e.g. chlorides)
- protects hairline cracks of up to 0.3 mm
- is supplied ready to use
- is also recommended as waterproofing under coatings or other surface protection treatments
- conforms to TL/TP OS-A of ZTV SIB 90 standards set by the German Federal Transportation Ministry and to the EN 1504-2.
- can be used according to principles 1, 2, 5, and 6 of EN 1504-9

Application Details

Suitable substrates	Approximate consumption - Mode of application
Concrete	min. 150 g/m ² - Low pressure pumping
Clinker masonry	min. 150 g/m ² - Low pressure pumping
Ceramic tiles	approx. 100 g/m ² - Low pressure pumping

 Evonik Degussa GmbH, 799 8 Balingen 30	
EN 1504-2 EN 1504-9 Protectosil® BHN Hydrophobizing Impregnation Storage conditions: -10°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 II > 10mm	
Water absorption and alkali solubility: Absorption coefficient < 4 % is compared to the untreated sample Alkali solubility < 10 % after storage in alkali solution	
Drying speed for hydrophobizing Impregnation: Class III > 0	
Harmful substances: in accordance with 5.4	

Processing

Protectosil® BHN is suitable for the waterproofing of mineral substrates, in particular low-porosity substrates. In most applications **Protectosil® BHN** has to be used undiluted. The amount to be applied depends to a large extent on how absorbent the substrate is.

A curing time of 28 days should be allowed for fresh concrete before **Protectosil® BHN** is applied. **Protectosil® BHN** can also be used on old or carbonated concrete. **Protectosil® BHN** should be cured for 5 days before an additional surface protection treatment such as **Protectosil ANTIGRAFFITI®** or **Protectosil® SC CONCENTRATE** is applied. If the second system has to be applied sooner a test patch should be done first.

The substrates to be treated should be air-dry and clean in order to ensure deep penetration of the active ingredient. Acceptable surface cleaning methods include sandblasting, water blasting and chemical cleaners. During application the outside temperature and the temperature of the substrate should be within the range of 0 °C to 40 °C. **Protectosil® BHN** should not come into contact with water before or during application and should not be applied if there is strong wind or if it is raining.

Protectosil® BHN must be applied by flowcoating to the saturation point. This is achieved by allowing it to flow without pressure against the surface to be treated. All delivery devices for liquids are suitable (airless sprayguns, for example). The material must not be atomized or applied with a brush.

A liquid film of **Protectosil® BHN** must remain in contact with the substrate for several seconds. Horizontal surfaces should have a shiny, wet appearance for 3-5 seconds. Vertical surfaces should exhibit a 30-50 cm shiny curtain of liquid. All equipment and containers must be clean and dry. After use they can be cleaned with any organic solvent (methylated spirit, petrol or thinners).

Non-absorbent substrates such as, for example, glass, wood, plastic, and metal cannot be treated with **Protectosil® BHN**. Glass, wood, and metal are not attacked by **Protectosil® BHN**. Neither are most plastics used in construction. Therefore covering is normally not necessary. To make sure we recommend to carry out a test. In the worst case, product not absorbed by the substrate may react with atmospheric moisture to form a greasy, glossy silicone resin film, which can easily be removed if cleaned immediately using conventional cleaning agents or alcohol (check for compatibility of the solvent with the surface). Plants in the vicinity of the substrate to be treated should be protected against contact with **Protectosil® BHN**. In addition **Protectosil® BHN** should not come into contact with asphalt as it would dissolve.

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

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