

## 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	98-100	%	
Solvent	solvent free		
Flash Point	63	°C	DIN 51755
Density (20 °C)	0.88	g/cm <sup>3</sup>	DIN 51757
Viscosity (20 °C)	0.95	mPa·s	DIN 53015
Boiling Point	approx. 186	°C	DIN 51751

### 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

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

### 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 on our website [www.protectosil.com](http://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](mailto:sds-hu@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

Protectosil® BHN is not intended for below grade waterproofing.

## Application Details

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

 Evonik Degussa GmbH, 790 8 Rheinfelden 30	
EN 1504-2 EN 1504-9 <b>Protectosil® BHN</b> 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 I: >= 10mm	
Water absorption and alkali stability: Absorption coefficient < 4 % compared to the non-treated sample Alkali resistance: >= 100% after storage in alkali solution	
Drying speed for hydrophobizing impregnation: Class III: > 0	
Harmful substances: in accordance with 6.4	

## 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.

For best results, 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.

This information and any recommendations, technical or otherwise, are presented in good faith and believed to be correct as of the date prepared. Recipients of this information and recommendations must make their own determination as to its suitability for their purposes. In no event shall Evonik assume liability for damages or losses of any kind or nature that result from the use of or reliance upon this information and recommendations. EVONIK EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION AND RECOMMENDATIONS PROVIDED. Reference to any trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used. Evonik reserves the right to make any changes to the information and/or recommendations at any time, without prior or subsequent notice.

#### **Europe / Middle-East / Africa / Row**

##### **Evonik Resource Efficiency GmbH**

Business Line Silanes  
Rodenbacher Chaussee 4  
63457 Hanau-Wolfgang  
Germany  
PHONE +49 6181 59 13636  
FAX +49 6181 59 713 915  
protectosil@evonik.com  
www.protectosil.com

#### **Asia / Pacific**

##### **Evonik (SEA) Pte. Ltd.**

Business Line Silanes  
3 Internatioanl Business Park  
#07-18, Nordic European Centre  
Singapore 609927  
PHONE +65 6809 6899  
FAX +65 6809 6699  
protectosil@evonik.com  
www.protectosil.com

#### **Asia / Pacific**

##### **Evonik Taiwan Ltd.**

Business Line Silanes  
Artist Construction Bldg  
9F, No. 133  
Min Sheng East Road, Sec 3  
Taipei, 105 Taiwan, R.O.C.  
Taiwan 10596  
PHONE +886 227 17 1242  
FAX +886 227 17 2106  
protectosil@evonik.com  
www.protectosil.com

#### **North America**

##### **Evonik Corporation**

Business Line Silanes  
299 Jefferson Road  
Parsippany, NJ 07054-0677  
USA  
PHONE (TOLL FREE) +1 800 828 0919  
FAX +1 973 929 8503  
protectosil@evonik.com  
www.protectosil.com

#### **Asia / Pacific**

##### **Evonik (Shanghai) Co. Ltd.**

Business Line Silanes  
55, Chungdong Road  
Shanghai 201108  
P.R. China  
PHONE +86 21 6119 1660  
FAX +86 21 6119 1075  
protectosil@evonik.com  
www.protectosil.com

#### **Asia / Pacific**

##### **Evonik Japan Co. Ltd**

Business Line Silanes  
12th Floor Monolith Building  
2-3-1, Nishi-Shinjuku-ku  
Tokyo 163-0912  
Japan  
PHONE +81 353 23 7446  
FAX +81 353 23 7397  
protectosil@evonik.com  
www.protectosil.com

#### **Latin America**

##### **Evonik Brasil Ltda.**

Business Line Silanes  
Alameda Campinas, 579  
01404-000 São Paulo-SP  
Brazil  
PHONE +55 11 3146 4123  
FAX +55 11 3146 4148  
protectosil@evonik.com  
www.protectosil.com

#### **Asia / Pacific**

##### **Evonik Korea Ltd.**

Business Line Silanes  
94, Galsan 1-dong  
Bupyeong-gu  
Incheon, 403-081, Korea  
PHONE +82 2320 4778  
FAX +82 2783 2520  
protectosil@evonik.com  
www.protectosil.com

#### **Asia / Pacific**

##### **Evonik India Pvt. Ltd.**

Business Line Silanes  
Krislon House  
Saki Vihar Road, Anderi (E)  
Mumbai - 400 072  
India  
PHONE +91 226 7238 809  
FAX +91 226 7238 811  
protectosil@evonik.com  
www.protectosil.com