Technical Data Sheet

Protectosil® BHN

Highly effective water repellent

PRODUCT DESCRIPTION

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

Typical Properties

Property	Unit	Value
Appearance		clear liquid
Boiling Point, min. DIN 51751	°C	186.6
Active Content		100%
Density DIN 51757 (@20 °C)	g/cm³	0.88
Diluents		none
Flash Point, min. DIN EN ISO 2719	°C	63.5
Refractive Index DIN 51423		1.40
Viscosity DIN 53015 (@20 °C)	mPa·s	~0.95

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

Especially suited for the water repellent impregnation of mineral construction materials in outdoor areas. Especially suited for use on cast-in-place, precast, glass fiber reinforced concrete (GFRC) and high-strength concrete, to protect the material against water, deicing salts and other waterborne contaminants. Alleviates deterioration of concrete due to alkali-silica reactivity. For use on bridge decks where fast drying is needed to minimize lane closures. For treating heavy-traffic wearing surfaces or areas that receive high salt concentrations (piers, coastal buildings), to provide a high-performance, long-lasting chloride screen.

Protectosil® BHN is not intended for below grade water-proofing.

BENEFITS & ADVANTAGES

Main advantages of Protectosil® BHN

- 99-100 % active content
- Excellent reduction of water uptake
- Excellent resistance to chloride ion ingress
- High resistance to alkaline environments
- Deep penetration into dense substrates
- Preservation of water vapor permeability
- No change of surface appearance
- Enhanced durability
- Protection of hairline cracks of up to 0.3 mm
- Good adhesion of coatings and paints
- Conforms to the EN 1504-2
- Excellent performance on wearing surfaces
- Applicable on new, old and carbonated concrete
- Quick dry time after application (~1 hour)

DOSAGE

Protectosil® BHN is to be used undiluted. The amount to be applied depends to a large extent on how absorbent the substrate is.

On vertical surfaces Protectosil® BHN is applied in a flooding application from the top down, so the material runs down 30-50 cm in a shiny curtain below the spray pattern. On horizontal surfaces a liquid film of Protectosil® BHN must remain in contact with the substrate for several seconds. The surface should have a shiny, wet appearance for at least 3-5 seconds.

Coverage rates (especially on vertical surfaces) depend on the type of substrate to be treated and should be identified on a test patch first. An indication for the minimum application rates is provided in the table below.

Suitable substrates	Approx. consumption	Mode of application
Concrete	min. 150 g/m²	low pressure pumping
Clinker masonry	min. 150 g/m²	low pressure pumping
Ceramic tiles	min. 100 g/m²	low pressure pumping

HANDLING & PROCESSING

Concrete must be allowed to cure for a minimum of 28 days. Concrete repair and replacement must be completed prior to application of Protectosil® BHN. Patching materials, caulking, sealing materials and traffic paint must be fully cured before applying Protectosil® BHN. All surfaces should be air-dry and clean in order to ensure deep penetration of the active ingredient. Cleaning is required to remove dirt, dust, efflorescence, mold, salt, grease, oil, asphalt, laitance, curing compounds, paint, coatings as well as other foreign materials. Acceptable surface cleaning methods include shotblasting, sandblasting, water blasting and using 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 should be cured for 5 days before an additional surface protection treatment such as Protectosil ANTIGRAFFITI® or Protectosil® SC CONCENTRATE is applied.

Protectosil® BHN must be applied by flow coating 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 (e.g. airless spray guns). The material must not be atomized or applied with a brush.

Do not alter or dilute the material. Do not apply to a wet or damp substrate.

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.

Protectosil® BHN should not come into contact with asphalt as it would dissolve. Non-absorbent substrates such as, e.g. 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. In order to make sure it is recommended to carry out a test prior to the application. At the worst, 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.

All equipment and containers must be clean and dry. After use they can be cleaned with an organic solvent (e.g. methylated spirit, petrol or thinners).

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 silanes.evonik.com 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® BHN is supplied in 28.4 l, 200 l as well as in 900 l containers.

STORAGE

Protectosil® BHN is a combustible liquid and should be kept away from heat, sparks, open flame and other sources of ignition. Protectosil BHN containers should be kept closed when not in use and should be stored at temperatures between -10 °C and 40 °C, away from rain and standing water. When working in an enclosed area, an air respirator should be used. Please refer to the material safety data sheet for more detailed information.

SHELF LIFE

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

Registration Listings

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

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EN 1504-2

Protectosil® BHN

Hydrophobizing Impregnation

Storage conditions: -10 °C up to +40 °C;
containers must be kept tightly sealed and protected from moisture;
shelf life in originally sealed containers 12 months

Penetration depth: Class II >= 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 II: > 10

Harmful substances: In accordance with 5.4

For further information
visit our
Customer Portal

World of Protectosil®

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