

Product Data and Test Information

PROTECTOSIL® BHN PLUS

Water Repellent

PRODUCT DESCRIPTION

Protectosil® BHN PLUS is a clear penetrating breathable VOC compliant surface treatment for use on concrete, brick masonry, concrete masonry units and natural stone. This product's unique silane treatment penetrates into the substrate and chemically bonds with silica to form a permanent attachment of the water repellent molecule. In addition, an oil repellent additive resists the ingress of motor oil, transmission fluid, diesel fuel and other automotive fluids, and repels food products such as mustard, ketchup, food grease, milk, wine, beer and soft drinks.

Protectosil® BHN PLUS creates a deep hydrophobic layer which prevents the ingress of water and waterborne contaminants from entering the substrate and causing premature deterioration. By combining a low surface tension with a tailored rate of reaction, **Protectosil® BHN PLUS** is able to move through the moisture boundary layer which lines the pore structure of the substrate. This permits the development of uniform gradient permeation, or a consistent level of protection, throughout the entire depth of penetration which allows for a longer life of the treatment especially on wearing surfaces.

APPROPRIATE APPLICATIONS

For use on vertical or horizontal concrete and masonry surfaces to repel water and oil-based materials from penetrating into the substrate. For use on reinforced concrete to protect against corrosion due to water, deicing salts and salt water. Reduces staining and discoloration of concrete, brick masonry, limestone, marble, granite, natural stones and other building materials due to oil and waterborne contaminants. Can be applied to masonry to prevent the ingress of wind-driven rain while maintaining surface appearance and breathability.

ADVANTAGES

Protectosil® BHN PLUS is a mixture of an alkyltrialkoxo silane and a proprietary oil repellent additive, penetrating deeper than traditional silane and siloxane products due to its unique chemistry. This deeper penetration gives a long

lasting, high performance water and chloride screen. By greatly reducing water entering the substrate, and with it being a breathable system, a "drying out" of the substrate occurs. The oil repellent additive part of **Protectosil® BHN PLUS** creates an area of extremely low surface tension on the substrate, rendering the surface resistant to the ingress of oil-based materials. In addition, the repellent effect against food product is much greater than that imparted by traditional water repellent.

The primary function of **Protectosil® BHN PLUS** is to allow easier cleanup and reduce staining of the substrate due to the absorption of various oil and water-based contaminants. If spills are not cleaned up in a timely manner staining and absorption into the substrate will still occur. Contact your Protectosil® representative for compatible cleaning methods.

The main benefits of the product are:

- Excellent resistance to automotive fluids
- Excellent repellency of food products
- Reduces staining
- Excellent resistance to chloride ion ingress
- Breathable system
- Mitigation of AAR & ASR deterioration
- Deep penetration into substrate
- No change in surface appearance
- High resistance to alkali attack
- Long service life

LIMITATIONS

Not intended for below-grade waterproofing. Should not be applied if the surface temperature is below 20°F (-7°C) or above 100°F (40°C), if rain is expected within two hours following application, or if high winds or other conditions prevent proper application. If rain has preceded the application, the surface should be allowed to dry at least 24 hours.

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TECHNICAL DATA

Protectosil® BHN PLUS is a liquid alkyltrialkoxysilane with an oleophobic additive.

Color	water white
Active Substance	alkyltrialkoxysilane oleophobic chemical
Active Content	94%
Flash Point	84°F
Density	7.4 lbs/gal
VOC	400 g/l

TEST DATA

Absorption of Automotive Fluids – Time to fully absorb into concrete substrate	
Motor Oil	
Untreated surface	4.5 hours
Protectosil® BHN PLUS	8+ days
Transmission fluid	
Untreated surface	2.75 hours
Protectosil® BHN PLUS	8+ days
Food Products	
Staining Resistance	
Ketchup	Excellent
Mustard	Excellent
Soy sauce	Excellent
Water absorption	24 hours
ASTM C 642 "Water Absorption of Hardened Concrete"	
Untreated surface	4.23%
Protectosil® BHN PLUS	0.23%
ASTM D 2047 "Surface Friction"	
No change in surface friction from untreated to treated	

INSTALLATION

Concrete must be allowed to cure a minimum of 28 days. All repointing must be completed and allowed to cure at least 3 days. Concrete repair and replacement must be completed prior to application of **Protectosil® BHN PLUS**. Patching materials, caulking, sealing materials, traffic paint must be fully cured before applying **Protectosil® BHN PLUS**.

All surfaces must be cleaned to remove all traces of dirt, dust efflorescence, mold, salt, grease, oil, asphalt, laitance, curing compounds, paint, coatings and other foreign materials. Acceptable surface cleaning methods include shotblasting, sandblasting, waterblasting, and chemical cleaners. Check with your Protectosil® representative to verify that surface preparation is adequate.

Protectosil® BHN PLUS should be applied using low-pressure (15 to 25 psi) pumping equipment with a wet fan type spray nozzle. Alternate methods include power roller with a 1" nap or by brush. Do not alter or dilute the material. Do not apply to a wet substrate. A test patch should be applied to the substrate by a Protectosil® representative to verify coverage rate and application conditions.

Protectosil® BHN PLUS should be applied at a coverage rate to obtain the desired repellent effect. A test patch should be applied and a field test run to determine if repellency is acceptable. Your Protectosil® representative can give exact coverage rates for your particular project. Please refer to Evonik Corporation "**Protectosil® BHN PLUS** Application Instructions" for more detailed information.

Protect glass, metal, plastic and other nonporous substrates from overspray. **Protectosil® BHN PLUS** will not etch glass but will leave a residue on non-porous surfaces.

Precautions: Protectosil® BHN PLUS is a flammable liquid and should be kept away from heat sparks, open flame or other sources of ignition. The **Protectosil® BHN PLUS** containers should be kept closed when not in use and should be stored at temperatures between 0°F and 120°F (-18°C and 50°C), away from rain and standing water. When working in an enclosed area, an air respirator should be used. Please refer to material safety data sheet for more detailed information.

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AVAILABILITY

Protectosil® BHN PLUS is available in 5-gallon pails and 55-gallon drums. Shipped F.O.B. throughout the United States and Canada. Contact your local Protectosil® representative or your regional manager for specific cost information. You can obtain their contact information on our website, silanes.evonik.com/en, or by calling us at 1 (800) 828-0919.

TECHNICAL SERVICE

Technical service engineers and scientists are available to answer questions about product performance, application methods and compatibility with other building materials. You can speak to one of our engineers or scientists directly by calling our toll-free number, 1 (800) 828-0919, and selecting option 1.

MANUFACTURER

Evonik Corporation
2 Turner Place
Piscataway, NJ 08854
1 (800) 828-0919
protectosil@evonik.com
silanes.evonik.com/en

PROTECTOSIL® PRODUCTS ARE MANUFACTURED AT THE EVONIK CORPORATION THEODORE, ALABAMA, PLANT UNDER A QUALITY SYSTEM CERTIFIED TO ISO-9001, ISO-14001, AND ISO-50001 REQUIREMENTS.

For more information, SDS and the most updated product information, and to find your local representative, go to silanes.evonik.com/en

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