Protectosil® BHN Plus
WATER REPELLENT
Product Data and Test Information

PRODUCT NAME
Protectosil® BHN Plus
100% active silane treatment with oleophobic additive.

MANUFACTURER
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PROTECTOSIL PRODUCTS ARE MANUFACTURED AT THE EVONIK DEGUSSA CORPORATION THEODORE ALABAMA PLANT UNDER A QUALITY SYSTEM CERTIFIED TO ISO-9001 REQUIREMENTS

PRODUCT DESCRIPTION
A clear penetrating breathable VOC compliant surface treatment for use on concrete, brick masonry, concrete masonry units and natural stone. The 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. This additive also repels food products such as mustard, ketchup, food grease, milk, wine, beer and soft drinks. Creates a deep hydrophobic layer which prevents the ingress of water and water borne contaminants from entering the substrate and causing premature deterioration. By combining a low surface tension with a tailored rate of reaction the Protectosil BHN Plus is able to move through the moisture boundary layer which lines the per structure of the substrate. This permits the development of uniform gradient permeation or a consistent level of protection throughout the entire depth of penetration. This 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. Reduces staining and discoloration of concrete, brick masonry, limestone, marble, granite, natural stones and other building materials due to oil and water borne contaminants.

For use on reinforced concrete to protect against corrosion due to water, deicing salts and salt water. Apply 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 alkyltrialkoxy silane and a proprietary oil repellent additive. The silane penetrates 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 an being a breathable system a “drying out” of the substrate occurs. The oil repellent additive creates an area of extremely low surface tension on the substrate. This effect renders 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 the 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 Evonik Degussa Corporation representative for compatible cleaning methods.

The main benefits of the product are:
- Excellent resistance to automotive fluids
- Excellent resistance to water intrusion
- Excellent chloride ion screening
- Excellent repellency of food products
- Reduces staining
- Breathable system
- Highly resistant to alkali attack
- Low VOC

LIMITATIONS
Not intended for below-grade waterproofing. Should not be applied if the surface temperature is below 40°F or above 100°F, 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.

(Continued)
**TECHNICAL DATA**

Protectosil BHN Plus is a liquid alkyltrialkoxy silane with an oleophobic additive.

- Color: water white
- Active Substance: alkyltrialkoxy silane
- 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.

<table>
<thead>
<tr>
<th>Fluid Type</th>
<th>Untreated Surface</th>
<th>Protectosil BHN Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Oil</td>
<td>4.5 hours</td>
<td>8+ days</td>
</tr>
<tr>
<td>Transmission fluid</td>
<td>2.75 hours</td>
<td>8+ days</td>
</tr>
<tr>
<td>Food Products – Staining resistance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ketchup</td>
<td>excellent</td>
<td></td>
</tr>
<tr>
<td>Mustard</td>
<td>excellent</td>
<td></td>
</tr>
<tr>
<td>Soy sauce</td>
<td>excellent</td>
<td></td>
</tr>
<tr>
<td>Water absorption – 24 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASTM C 642 “ Water Absorption of Hardened Concrete”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Untreated surface</td>
<td>4.23%</td>
<td></td>
</tr>
<tr>
<td>Protectosil BHN Plus</td>
<td>0.23%</td>
<td></td>
</tr>
</tbody>
</table>

**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 Evonik Degussa Corporation 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 Degussa Corporation “Protectosil BHN Plus Application Instructions” for more detailed information.

Protect glass, metal, plastic and other nonporous substrates form over spray. 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 and away from rain and standing water.

When working in an enclosed area, an air respirator should be used. Please refer to Evonik Degussa Corporation Material Safety Data Sheet for more detailed information.

**AVAILABILITY**

Protectosil BHN Plus is available in 5 and 55 gallon drums to approved applicators F.O.B. to various warehouses throughout the United States. Contact your local representative or your regional manager for specific cost information. You can obtain their contact information on our website www.protectosil.com or by calling our toll free number at 1-800-828-0919.

**TECHNICAL SERVICE**

Technical service engineers and chemists are available to answer questions on product performance, application methods and compatibility with other building components. You can speak to one of our chemists directly by calling our toll free number at 1-800-828-0919 select Option 4.

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For more information, MSDS and the most updated product information, and to find your local representative, go to www.protectosil.com