**Protectosil® 300C**
CORROSION INHIBITOR TREATMENT
Product Data and Test Information

**PRODUCT DESCRIPTION**
A clear penetrating breathable VOC compliant surface treatment for use on concrete. The unique solvent-free silane treatment penetrates into the substrate and chemically bonds with silica to form a permanent attachment of the water repellent molecule. Creates a deep hydrophobic layer which prevents the ingress of water and water borne contaminants from entering the substrate and causing premature deterioration.

The addition of a migrating corrosion inhibitor allows the **Protectosil 300C** to be used to reduce corrosion in steel reinforced concrete. The inhibitor has an independent migration rate of 5 to 15 mm per day. This allows the inhibitor to reach the steel and form protective layer to reduce active corrosion sites.

**APPROPRIATE APPLICATIONS**
For use on cast-in-place, pre-cast, and high strength concrete to protect the reinforcing steel from corrosion due to the effect of water, deicing salts and carbonation. For protecting concrete structures such as parking and bridge decks, columns and beams, piers, sea walls, sidewalks, balconies, driveways, roads and other steel reinforced concrete structures. Inhibitor additive reduces active corrosion of steel reinforced concrete. For treating heavy traffic wear locations or areas which receive high salt concentrations (piers, coastal buildings) to provide a high performance, long lasting chloride screen.

**ADVANTAGES**
**Protectosil 300C** is a solvent-free alkyltrialkoxy silane with a corrosion inhibitor that protects against corrosion of steel reinforcement. Reduces corrosion without harmful additive such as nitrites, phosphates, or chromates. Acts as a mixed inhibitor effectively working on both anodic and cathodic corrosion sites.

The main benefits of the product are:
- Excellent resistance to water intrusion
- Excellent resistance to chloride ion ingress
- Reduces microcell and macrocell corrosion
- Mitigation of AAR & ASR deterioration
- Excellent performance on wearing surfaces
- Breathable system
- Deep penetration into substrate
- High resistance to alkali attack
- Keeps substrates cleaner

**LIMITATIONS**
Not intended for below-grade water-proofing. Should not be applied if the surface temperature are below 20°F (-6.5°C) or above 100°F (38°C), if rain is expected within four 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 48 hours. Product will leave a residue on glass, metal and other non-porous surfaces.

**TECHNICAL DATA**
**Protectosil 300C** is a liquid silane with corrosion inhibitor additive.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active content</td>
<td>100%</td>
</tr>
<tr>
<td>Color</td>
<td>clear to slightly yellow</td>
</tr>
<tr>
<td>Density</td>
<td>0.89 s.g.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>2.5 cps</td>
</tr>
<tr>
<td>Solvent</td>
<td>none</td>
</tr>
<tr>
<td>Flash point</td>
<td>150°F (65.5°C)</td>
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<tr>
<td>VOC</td>
<td>&lt; 400 g/l</td>
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**TEST DATA**
**Alberta DOT Penetrating Sealer Type 1c** (0.35 w/c concrete)
- Water Repellency w/ heavy abrasion 86.1%

**Corrosion Beam Test (Cracked G-109)**
- Six Month Cyclic Salt Ponding – 65% reduction

**ASTM C 642 “Water Absorption of Concrete”**
- Treated with Protectosil 300C
  - 48 Hours 0.03%
  - 50 Days 0.74%

**ASTM C 672 “Deicer Scaling”**
- 100 cycles (non-air entrained concrete) -- 0 rating

**ASTM G 3 Practice for Electrochemical Measurements in Corrosion Testing**
- Coating layer 100µ to 250µ

**NCHRP Series II - Reduction in Water Absorption**
- @ 200 ft²/gallon 90%
  - @ 300 ft²/gallon 87%

**Reduction in Chloride Ion Ingress**
- @ 200 ft²/gallon 91%
  - @ 300 ft²/gallon 88%

**NCHRP Series IV - Reduction in Chloride Ions**
- @ 200 ft²/gallon 99%
  - @ 300 ft²/gallon 98%
For more information, MSDS and the most updated product information, and to find your local representative, go to www.protectosil.com

**ASSHTO T 259 “90 Day Salt Ponding”**

<table>
<thead>
<tr>
<th>Description</th>
<th>Reduction Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(specimens abraded)</td>
<td>99%</td>
</tr>
<tr>
<td>(nonabraded specimens)</td>
<td>85%</td>
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</tbody>
</table>

**INSTALLATION**

Concrete should be allowed to cure a minimum of 28 days. Concrete repair and replacement must be completed prior to application of Protectosil 300C. Patching materials, caulking, sealing material, traffic paint must be fully cured before application.

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. In some instances, the use of a power broom or street sweeper can be utilized. Check with your Protectosil representative to determine what method is appropriate and to verify that surface preparation is adequate prior to treatment.

Protectosil 300C 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 or damp substrate.

Typical application of Protectosil 300C is a two coat process. The following net coverage rates can be used as a guideline.

- Cast in Place Parking Garages: 100-250 ft²/gallon
- Pre-cast Parking Garages: 150-300 ft²/gallon
- High Density Pre-cast Vertical: 200-300 ft²/gallon

Allow the first coat to dry for minimum of 2 hours (at 70°F) in between coats and make sure to broom out puddled material. Cooler temperatures may facilitate a longer drying time in between coats. Check for exact coverage rate for you project with your Evonik representative. A test patch should be applied to the substrate to verify coverage rate, application conditions and visual appearance.

**Precautions:** Protectosil 300C is a combustible liquid and should be kept away from heat, sparks, open flame or other sources of ignition. The containers should be kept closed when not in use and should be stored at temperatures between 0°F (-20°C) and 120°F (50°C) and 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.

**AVAILABILITY**

Protectosil 300C 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, www.protectosil.com, 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**

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