

Protectosil® CHEM-TRETE® 40 VOC

WATER REPELLENT

Product Data and Test Information

PRODUCT NAME

Protectosil® CHEM-TRETE® 40 VOC

High-performance, penetrating water repellent for concrete, masonry and stone.

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 AND ISO-14001 REQUIREMENTS.

PRODUCT DESCRIPTION

A clear, penetrating, breathable water repellent for use on exterior above-grade concrete, brick masonry, concrete masonry units and some natural stones. Penetrates the surface and bonds chemically to the substrate, resulting in permanent attachment of the water repellent molecule. **Protectosil CHEM-TRETE 40 VOC** is not a coating and as a result will not discolor or change the surface appearance in any way.

By reducing the amount of water entering the substrate, **Protectosil CHEM-TRETE 40 VOC** reduces the intrusion of waterborne contaminants such as salt and dirt, and reduces the deteriorating effects of these contaminants, such as rebar corrosion, spalling, scaling, efflorescence, leaching and staining.

APPROPRIATE APPLICATIONS

For use on concrete, to protect the reinforcing steel from corrosion due to the effects of water, deicing salts and other waterborne chemicals.

For use on brick masonry, to protect against the ingress of wind-driven rain.

For use on concrete pavement for highways, parking decks and airport runways, to reduce scaling due to deicer chemicals. Reduces the effects of mildew, efflorescence and stains on vertical concrete and masonry buildings.

Imparts water repellency to a substrate for an extended time.

ADVANTAGES

Protectosil CHEM-TRETE 40 VOC is an isobutyltri-alkoxysilane in an alcohol carrier. The silane is designed to

penetrate deep into the substrate and impart a high level of water and chloride ion screening. This provides the substrate with long-lasting protection. Because of the purity of **Protectosil CHEM-TRETE 40 VOC**, it will not leave a residue on nonporous substrates such as glass windows, metal frames and painted surfaces.

Protectosil CHEM-TRETE 40 VOC meets the volatile organic content regulations in numerous states. In addition, **Protectosil CHEM-TRETE 40 VOC** does not contain exempt solvents (such as 1,1,1 trichloroethane) that may be hazardous. For the proper VOC regulations in your specific location, contact your Protectosil representative.

The **Protectosil CHEM-TRETE 40 VOC** product line has an unprecedented track record in protecting concrete, masonry and natural stone structures from deterioration due to water and waterborne contaminants. Structures treated in the 1970s are still protected, and these results are documented by state, federal and private agencies. By incorporating **Protectosil CHEM-TRETE 40 VOC** into your integrated design, you can earn vital Leadership in Energy & Environmental Design (LEED) credits for both new and existing construction projects.

The main benefits of the product are:

- Excellent resistance to water intrusion
- Excellent resistance to chloride ion ingress
- High resistance to wind-driven rain
- Breathable system
- Deep penetration into the substrate
- No masking of windows necessary
- No blushing, peeling or yellowing
- High resistance to alkali attack
- Reduced efflorescence
- No change in surface appearance
- Keeps substrate cleaner

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 2 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 for at least 24 hours. Caution should be taken with specialty coated glass, asphaltic materials and plastic windows. Check compatibility before application. Shrubbery and plant life should be protected from overspray.

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TECHNICAL DATA

Protectosil CHEM-TRETE 40 VOC is a clear, colorless liquid containing isobutyltrialkoxysilane in alcohol.

Color	water white
Active Substance	isobutyltrialkoxysilane
Active Content	>50% by weight
Solvent	denatured ethyl alcohol
Flash Point	54°F
Density	7.0 lb/gal
VOC	590 g/l

TEST DATA

NCHRP #244 (@200 ft²/gal)

Series II	86% reduction in water absorption
Series II	87% reduction in chloride absorption
Series IV	99% reduction in chloride absorption

ASTM C 672 "Deicer Scaling"
100 cycles-0+ rating
(non-air-entrained concrete)

ASTM E303 "Skid Resistance"
Dry surface no change
Wet surface no change

Alberta DOT Penetrating Sealers Type 1b
Initial water repellency 84.3%
After abrasion 85.1%

ASTM E 514 "Water Permeance of Masonry"
Untreated leakage 5.5 l/hr (1.5 gal/hr)
Treated leakage 0.0 l/hr (0.0 gal/hr)
Reduction in leakage 100%

ASTM C67 Water Absorption of Brick
24 hours 98% effective
5 days 91% effective

ASTM D 1653 Water Vapor Transmission
75.8 g/ft²/24 hours, 100% breathable

INSTALLATION

Concrete must be allowed to cure for a minimum of 28 days. All repointing must be completed and allowed to cure for at least 3 days. Concrete repair and replacement must be completed prior to application of **Protectosil CHEM-TRETE 40 VOC**. Patching materials, caulking, sealing materials and traffic paint must be fully cured before applying **Protectosil CHEM-TRETE 40 VOC**.

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 using chemical cleaners. Check with your Protectosil representative to verify that surface preparation is adequate.

Protectosil CHEM-TRETE 40 VOC should be applied using low-pressure (15 to 25 psi) pumping equipment with a wet fan type spray nozzle. Alternate methods include using either a power roller with a 1" nap or a brush. Do not alter or dilute the material. Do not apply to a wet or damp substrate. A test patch should be applied to the substrate by a Protectosil representative to verify coverage rate and application conditions.

On vertical surfaces, apply **Protectosil CHEM-TRETE 40 VOC** in a flooding application from the bottom up, so the material runs down 6 to 8 inches below the spray pattern. On horizontal surfaces, the liquid material should pond on the surface for at least 5 seconds before being absorbed. Coverage rates on horizontal concrete surfaces are typically between 150 and 250 ft²/gal. Coverage rates on vertical surfaces depend on the type of material to be treated. Your Protectosil representative can give an exact coverage rate for your particular project. Please refer to the "**Protectosil CHEM-TRETE 40 VOC** Application Instructions" for more detailed information.

Precautions: Protectosil CHEM-TRETE 40 VOC is a flammable liquid and should be kept away from heat, sparks, open flame and other sources of ignition. **Protectosil CHEM-TRETE 40 VOC** containers should be kept closed when not in use and should be stored at temperatures between 0°F (-18°C) and 120°F (50°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.

AVAILABILITY

Protectosil CHEM-TRETE 40 VOC is available in 5- and 55-gallon drums to approved applicators, F.O.B. to various warehouses throughout the United States. Contact Evonik Degussa Corporation at 1 (800) 828-0919 for the sales representative in your area for specific cost information.

TECHNICAL SERVICE

Technical service engineers and chemists are available to answer questions about product performance, application methods and compatibility with other building materials.

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

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