

## Technical Information

# Protectosil® CHEM-TRETE® 40 VOC



## WATER REPELLENT

### Product Data and Test Information

#### PRODUCT NAME

##### Protectosil® CHEM-TRETE® 40 VOC

High performance water repellent for concrete, masonry and stone.

#### MANUFACTURER

Degussa Corporation  
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1 (800) 828-0919

PROTECTOSIL PRODUCTS ARE MANUFACTURED AT THE DEGUSSA CORPORATION THEODORE, ALABAMA PLANT UNDER A QUALITY SYSTEM CERTIFIED TO ISO-9001 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. It 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 water carrying 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 water borne chemicals.

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

For use on concrete pavement on highways, and airport runways to reduce scaling due to deicer chemicals.

To reduce the effects of mildew, efflorescence, and stains on vertical concrete and masonry buildings.

To impart water repellency to a substrate for an extended time.

#### ADVANTAGES

**Protectosil CHEM-TRETE 40 VOC** is an isobutyltrialkoxysilane 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 the **Protectosil CHEM-TRETE 40 VOC**, it will not leave a residue on non-porous substrates such as glass windows, metal frames and painted surfaces.

**Protectosil CHEM-TRETE 40 VOC** meets the volatile organic content regulations in numerous states. This includes New York and New Jersey. 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 Degussa Corporation 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 water borne contaminants. Structures treated in the 1970s are still protected and these results are documented by state, federal and private agencies.

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

## LIMITATIONS

Not intended for below-grade waterproofing. Should not be applied if the surface temperature is below 20 °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. Caution should be taken with specialty coated glass or plastic windows. Check compatibility before application.

## TECHNICAL DATA

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

Color	water white
Active Substance	isobutyltrialkoxo silane
Active Content	>40% by weight
Solvent	denatured ethyl alcohol
Flash Point	54 °F
Density	7.0 lbs/gal
VOC	600 g/l max

## TEST DATA

NCHRP #244 (@200 ft<sup>3</sup>/gallon)

Series II	84% Reduction in Water Absorption
Series II	87% Reduction in Chloride Absorption
Series IV	99% Reduction in Chloride Absorption

ASTM C 672 “Deicer Scaling”

60 cycles (non-air entrained Concrete) 0+ rating

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 liters/hr. (1.5 gallons/hr.)
Treated Leakage	0.0 liters/hr. (0.0 gallons/hr.)
Reduction in Leakage	100%

ASTM D 1653 Water Vapor Transmission

75.8 g/ft<sup>2</sup>/24 hours, 100% Breathable

## 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 CHEM-TRETE 40 VOC**.

Patching materials, caulking, sealing materials, 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 chemical cleaners. Check with your Degussa Corporation 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 power roller with a 1” nap or by brush. Do not alter or dilute the material. Do not apply to a wet substrate, although a damp surface may be treated. A test patch should be applied to the substrate by a Degussa Corporation 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 at least 5 seconds before being absorbed. Coverage rates on horizontal concrete surfaces are between 100 to 250 ft<sup>3</sup>/gallon. Coverage rates on vertical surfaces depend on the type of material to be treated. Your Degussa Corporation representative can give an exact coverage rate for your particular project. Please refer to Degussa Corporation “**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 or other sources of ignition. The **Protectosil CHEM-TRETE 40 VOC** 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 Degussa Corporation 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. various warehouses throughout the United States. Contact Degussa Corporation at 1-800-828-0919 or the Sales Representative in your area for specific cost information.

## TECHNICAL SERVICE

Technical service engineers and chemists are available to answer questions on product performance, application methods and chemical composition.

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