REMR MATERIAL DATA SHEET CM-SE-1.21

CONCRETE SEALER: CHEM-TRETE BSM

1. NAME

Chem-Trete BSM

2. MANUFACTURER

Dynamit Nobel of America, Inc.
10 Link Dr.
Rockleigh, NJ 07647
Telephone: 800-631-1668;
201-767-1660

3. DESCRIPTION

Chem-Trete BSM is a solution of an organosilane in ethyl alcohol.

4. USES & LIMITATIONS

Uses: Chem-Trete BSM is ideal for both new and old concrete and masonry (all types of concrete, stone, and brief products).

By chemical reaction, a water-repellent group is chemically bonded to the substrate. Chemical bonding forces, which are much stronger than physical bonding forces, result in permanent protection.

Chem-Trete BSM reacts with the moisture either present in the substrate or in the atmosphere. The reaction is accelerated by the alkalinity of the concrete. Special grades of Chem-Trete BSM have been prepared for use on surfaces that are essentially neutral, such as some of the natural stones. The Chem-Trete BSM then chemically reacts and permanently bonds to the substrate. The chemical bonds that are formed are identical to those which hold the substrate together, making the water repellency a permanent part of the substrate.

It has strong advantages on surfaces subject to abrasion such as parking garages and entrance ramps.

Chem-Trete BSM penetrates deeply and chemically bonds to the substrate. Average penetration is 1/4 to 5/16 in. on concrete, with penetration in some cases as deep as 3/4 to 1 in. Because the carrier solvent will mix easily with water, Chem-Trete BSM will penetrate and weatherproof a dam surface. The moisture in the substrate helps the Chem-Trete BSM chemically bond to the substrate.

Limitations: Chem-Trete BSM should not be applied if the ambient temperature exceeds 100° F or if, during the cold months, ice or frost is visible covering the surface.

All equipment and clothing should be thoroughly washed after the application using water. Equipment must be free of water prior to using it for applying Chem-Trete BSM.

5. MANUFACTURER'S TECHNICAL DATA

Packaging: Chem-Trete BSM is supplied in 55-gal drums and 5-gal pails.

Test results: A dramatic reduction in water absorption was obtained in a test conducted by the Portland Cement Association. Moisture absorption was measured by ASTM C-642. Eight concrete cubes, 3 by 3 in., were cured

and oven-dried according to test procedure. Four were treated with Chem-Trete BSM, and four were not treated. The cubes were then submerged in water for 48 hr, followed by 24-hr submersion in boiling water to simulate years of intense sun and rain. Six of the eight, three treated and three not treated, were then resubmerged in water. Two were broken for visual observation. Measurements of the percentage increase in weight were recorded as follows:

Submersion Time	Treated Cubes, % Weight Increase	Untreated Cubes, % Weight Increase
After 48-hr soaking	0.8	4.8
Then 24-hr boiling	1.3	5.0
Next 7 days submersion	1.5	5.2
14 days submersion	1.7	5.2
21 days submersion	1.7	5.3
28 days submersion	1.8	5.3
35 days submersion	1.8	5.3
42 days submersion	1.9	5.3
49 days submersion	1.9	5.3
56 days submersion	2.0	5.4

Warranty: A warranty is available for up to 10 years. Warranty covers labor and materials and requires no owner maintenance.

6. MANUFACTURER'S GUIDANCE FOR APPLICATION

Surface preparation: It is not necessary to clean the structure if the Chem-Trete BSM can penetrate the surface. However, the surface to which Chem-Trete BSM will be applied should be free from dirt, grease, oil, coatings, and other foreign materials that may interfere with penetration.

The best approach on older structures is to first restore the structure to a clean appearance by waterblasting, sandblasting, or other suitable means to clean the structure.

Application: Chem-Trete BSM may be applied using low-pressure (15 psi max) airless spray equipment such as a pump-up garden sprayer or drum-mounted pump. The spray equipment should have a fan-type spray nozzle. All equipment must be dry prior to use.

All surfaces treated should be saturated or flooded using a low-pressure airless spray. On vertical surfaces it is preferable to treat from the bottom up as this gives the applicator a straight line to follow and avoids missing small areas. The proper quantity is being applied to vertical surfaces when the Chem-Trete BSM runs 6 to 8 in. below the spray pattern. The proper quantity is being applied to horizontal surfaces when the Chem-Trete BSM stands for a few seconds before completely penetrating.

Application rate: Consumption rates for various substrates depend on the porosity and texture of the substrate. The estimated application rates vary from 75 to 200 sq ft/gal for various surfaces; for example a bridge deck showed repair between 100 to 150 sq ft/gal.

7. CORPS OF ENGINEERS' EVALUATION

Physical and mechanical properties:

Percent solid:
(ASTM D 1644, Method A): 0.2%

Percent water absorption (ambient temperature) (ASTM C 642):

1 day	0.15%
2 days	0.22%
4 days	0.31%
7 days	0.42%

Ratio of percent water absorption for treated to nontreated specimen (2-day submersion): 5.0%

Percent water transmission:

2 days	0.40%
4 days	0.58%
7 days	0.80%

Ratio of percent water transmission for treated to nontreated specimen (7-day diffusion): 22.6%

8. ENVIRONMENTAL CONSIDERATIONS

Reasonable caution should guide the preparation, repair, and cleanup phases of sealant activities involving potentially hazardous and toxic chemical substances. Manufacturer's recommendations to protect occupational health and environmental quality should be carefully followed. Material safety data sheets should be obtained from the manufacturers of such materials. In cases where the effects of a chemical substance on occupational health or environmental quality are unknown, chemical substances should be treated as potentially hazardous toxic materials.

9. AVAILABILITY & COST

Information concerning the availability and cost of Chem-Trete BSM can be obtained by writing the manufacturer at the address given in item 2 or calling 201-767-1660.

10. TECHNICAL SERVICE

Information on technical service can be obtained by writing the manufacturer at the address given in item 2 or calling 201-767-1660.