

# Capstone™ ST-300

Repellent

## Penetrating Sealer for Porous Surfaces

### Technical Information

#### Description

Capstone™ ST-300 is an anionic aqueous fluorochemical dispersion with no intentionally-added VOC that provides a durable, non-film forming, transparent protective barrier against oil and water on porous mineral surfaces. Capstone™ ST-300 is a repellent used in water-based penetrating sealers for stone, unglazed tile, grout, terra cotta, concrete, and brick. Capstone™ ST-300 provides oil and water repellency, stain resistance, and easy stain cleanup.

#### Applications and Formulating Information

Capstone™ ST-300 is used in diluted solutions containing 1.5-2.5% active ingredient (10-18% commercial product) working strength with deionized or soft water (<50 ppm hardness). Typical coverage rate is from 3-25 m<sup>2</sup>/L of diluted solution, depending on the porosity of the mineral substrate. Thoroughly wet the surface being treated with the diluted product, and remove excess liquid after 15-30 min. The optimum dilution rate should be determined for each application. If blended, maintain pH >7.

This product is anionic and is usually compatible with other materials in a blended system (except cationic additives). It is recommended that blended system be checked for stability. The product may be applied using a saturated brush, roller, paint pad, mop in one or two layers (to ensure complete coverage). **DO NOT SPRAY.** A biocide should be added to formulations made using Capstone™ ST-300 to protect the formulation against microbial growth.

#### Typical Properties

Appearance	Colorless to yellow liquid
Stability	Stable at normal temperatures. Perishable if frozen. Viscosity may increase with time or cold storage
pH	7.5-9.0
Active Solids, %	14
Density, g/mL	1.1
Flash Point (Closed Cup), °C (°F)	Does not flash
Shelf Life	2 years
Spray	Do not spray

#### Performance

Capstone™ ST-300 (diluted to 13% of commercial product in deionized water) was compared to a competitive aqueous-based silicone sealer. Each product was applied to limestone and Saltillo (Mexican clay tile or terra cotta) and allowed to dry for three days. **Corn oil, Italian dressing, ketchup, mustard, grape juice, and coffee were then placed on the treated substrates.** After 24 hr, the tiles were washed with a 1% soap solution and allowed to dry. The ratings were totaled for each tile sample. The results below show that Capstone™ ST-300 outperformed the competitive aqueous-based silicone sealer. Similar results have been achieved on other porous mineral substrates.

Scoring System for Each Stain After Dry	
No Visible Stain	0
Very Slight Stain	1
Light Stain	2
Moderate Stain	3
Heavy Stain/Complete Penetration of Stain into Substrate	4

**Scoring System for Water/Oil Repellency**



5 Contact angle 100-120°    4 Contact angle 75-90°    3 Contact angle 45-75°  
 2 Contact angle 25-45°    1 Contact angle 10-25°    0 Contact angle <10°

**Performance Comparison**

24 hr Stain Scores of Six Stains		
Treatment	Limestone	Saltillo
Capstone™ ST-300	2	6
Silicone (aqueous)	8	13
Untreated	19	21

Cumulative scale from 0 (best) to 24 (worst).  
 Lower score = Higher performance

Treatment	Oil Repellency	Water Repellency	Stain Resistance
Capstone™ ST-300	Excellent	Excellent	Excellent
Silicone (aqueous)	Poor	Excellent	Poor to Good
Untreated	None	None	Very Poor

**Personal Safety, First Aid, Storage and Handling**

See Safety Data Sheet (SDS) for use and handling recommendations. Review this information with all personnel handling Capstone™ ST-300. Mix well before using. Protect from freezing. Do not spray.

**Capstone™ Repellents and Surfactants**

- Deliver maximum performance
- Regulatory and stewardship information is available upon request
- Are listed on TSCA inventory

**Package Sizes**

Tote-2,200 lb (998.8 kg), Drum-440 lb (199.76 kg), Pail-40 lb (18.16 kg), Bottle-8 lb (3.632 kg)

For questions regarding technical data, commercial supply, and sampling:

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