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# Vitragard FS

## Surface Sealing Coating Composition for Fused Silica

Vitragard FS is a ready-to-use, water-based brushable paint that seals the surface of fused silica with a vitreous impervious layer. After applying, drying, and one-time firing to 900-950 C, the Vitragard FS is permanently bonded to the fused silica substrate. For fused silica containing up to 85% porosity, the erosion-resistant layer will enhance the substrate toughness without degrading the thermal properties of the fused silica. The sealed surface is also protected from gases permeating the body to attack the underlying substrate. Vitragard-coated porous fused silica parts are still highly thermally insulating and can now be top-coated with any of our Boron Nitride coatings to enhance resistance to molten aluminum and its alloys.

### Key Attributes

- Seals all types of fused silica parts, from highly porous (>85%) to dense fused silica (DFS) with a tough, glassy non-silica coating
- Applies easily onto the surface with minimal penetration
- Improves the erosion resistance of porous fused silica, extending the lifetime of the coated part
- Prevents reactive gases from penetrating through the parts
- Allows coating with highly nonwetting Boron Nitride paints for all molten metal processing and transfer components
- Safe, Water-Based, No VOC's
- Can be diluted with water

### Ideal Use

- Sealing surfaces to provide a more chemically resistant material than silica, while also providing good erosion resistance and allowing the good thermal insulating ability of porous silica along with its excellent thermal shock properties
- Stopping sticking and adherence of residual metal in pores and rough surfaces

### Sizes and colors

Vitragard FS is a white-colored, relatively thick paint.  
 Size: Nalgene quart or 1 gallon pail

### Safety Information

- Consult SDS before use.
- Avoid breathing of spray/vapors.
- For Industrial Use only.



### Specifications

Active Ingredients	Proprietary
Max Use Temperature with All Atmospheres	<900 C (<1652 F)
Fired Composition	Proprietary
Liquid Carrier	Water
Binder Phase	Stable Refractory Mixture
Specific Gravity	1.71
Brookfield Viscosity (cps)	2800–3200@3/30
Color	White
Shelf Life (months)	>12
Coverage (ft <sup>2</sup> /gal)	100 to 400
Coating pH	3-4
H F R Ratings	1-0-0
Substrate Use	All "fused silica" types, highly porous to dense, DFS

### Use Notes

1. Remove any surface oil, dust, grease, scale, or other coating.
2. Apply a relatively thick layer onto the surface by brushing.
3. Dry at ambient temperature until dry to the touch.
4. One-time 'bake-on' at 900-950 C for 30 minutes to 1 hour to seal the surface.

Helpful Hint: Paint over the entire area with one thick coating. Do not force the coating into the porosity. Dry preferably at room temperature and then heat up to 950 C for 1/2 hour for best results.

### CAUTION: DO NOT CONTACT WET COATINGS WITH MOLTEN METAL.

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