



Material Technologies  
Solving Tough Problems

# FlueGard™-425S

## Inorganic Polymeric System for Very Hot Corrosion Protection

- Resistant to SO<sub>3</sub>, SO<sub>2</sub>, HCl, CO<sub>2</sub> and NO<sub>x</sub> gases
- Excellent performance up to 425°C (797°F)
- Resistant to dust abrasion
- Application by air spray, roll or brush
- Simple inspection and maintenance

### Product Description

FlueGard™-425S is a single component inorganic polymeric material with a high load of reactive fillers. Main use is for very high temperature corrosion protection in the flue gas section of industrial plants. The flue gases found in cement plants, metal smelters, waste incineration, power generation and oil refineries, contain SO<sub>3</sub>, SO<sub>2</sub>, HCl, NO<sub>x</sub> and dust, they are extremely corrosive and abrasive. FlueGard™-425S has outstanding performance on steel surfaces exposed to this very hot and severely aggressive environment.

### Applications

The main areas of application are on the inside surfaces of:

- Bag houses, electrostatic precipitators and ducts in metal smelters and waste incinerators.
- Gas scrubbers, ducts and chimneys in power generation plants and oil refineries.
- Conditioning towers and stacks in cement and lime plants.

### Performance

FlueGard™-425S has an outstanding performance in the areas exposed to the hot flue gases of industrial facilities. It bonds and protects the steel from corrosion and abrasion at temperatures ranging from ambient to 425°C with peaks up to 500°C.

FlueGard™-425S will also resist chemical and salt corrosion in external high temperature applications in industrial and marine environments due to its tough inorganic polymeric matrix and a strong bond to the substrate.



Spray application of FlueGard™-425S

### Installation

FlueGard™-425S is supplied as a single component system. The material is mixed to redisperse the active fillers and is applied by air spray, roll or brush on a sandblasted, dry steel surface. The material is dry to touch after 12 to 24 hours and it cures into a hard coating. At this stage it can be inspected for thickness and integrity and any defect can be recoated.

Once the coating inspection is satisfactory, the final cure is performed at 170°C (338°F) for a minimum of twelve hours. Typically this is done using the hot combustion gases during the start up of the process. Also can be done with external heat.

### Additional Information

The shelf life of FlueGard™-425S will be at least one year. The material shall be stored in a cool and dry area in the original unopened containers.

The formulation contains solvent, avoid excessive exposure to inhalation and body contact. Use in well ventilated areas, for indoor applications use forced ventilation.

See the corresponding MSDS sheets.

## Product Properties

Physical properties	Test Method	Typical Value
Hardness, Shore D	ASTM D-2240	>80
Taber abrasion, mg. (CS-17, 1Kg., 1000 cycles)	ASTM D-4060	<150
Adhesion to steel, psi.	ASTM D-4541	>700
Impact resistance, in-lbf	ASTM D-2794	> 40
Heat ageing	ASTM D-2485	425°C (797°F)
<b>Chemical properties</b> (weight gain, 1 week immersion)		
HCl 10%	ASTM D-471	< 1.0 %
H3PO4 54%	ASTM D-471	< 0.5 %
H2SO4 10%	ASTM D-471	< 0.2 %
H2O	ASTM D-471	< 1.0 %

## Application

Application methods	Spray, roll or brush
Vertical dry film thickness, single coat	20 to 25 mils (0.5 to 0.62 mm)
Coverage at 20 mils dry film thickness	50 sq.ft (4.7 sq.mt)/gallon
Surface preparation	Sand blast, SSPC SP-10, NACE2 (Near white metal)
Surface profile	> 3.0 mils (>75 microns)
Coating inspection time	After 12 hours
Recoating interval	Up to 72 hours after initial application
Solvent for viscosity adjustment	Xylene or toluene
Maximum dry film thickness	40 mils (1.0 mm)

## Handling Properties

Shelf life	1 year
Shipping and storing temperature	10°C to 40°C (50°F to 104°F)
Mixing to redisperse fillers	>5 minutes at high speed, no sediments
Pot life	Single component
Cure time to tack free	12 hours
Final cure time	1 hr. at 260°C (500°F) to 12 hrs. at 170°C (338°F)
Surface temperature for application	10°C to 50°C (50°F to 122°F)
Air relative humidity for application	<90%, 5°C above dew point

## Ordering Information for FlueGard™-425S

Product is supplied as single component in 1 or 4 gallon kits.			
Description	Packaging	Net Weight	Minimum Order
FlueGard™-425S / Gallon Kit	Can 1 gallon (3.8 L)	19.8 lb.(8.9Kg)	2 gallons
FlueGard™-425S / Pail Kit	Pail 4 gallons (15.2L)	79 lb.(35.9Kg)	8 gallons

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