

# HIGH TEMPERATURE HIGH EMISSIVITY COATINGS

Technical Bulletin A5-S2

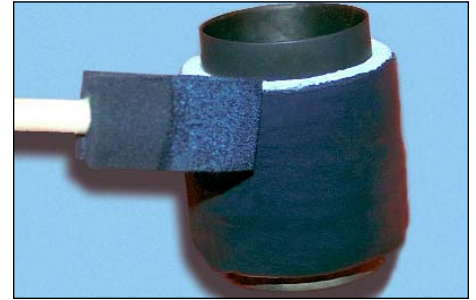
## PRODUCT HIGHLIGHTS

The HiE-Coat™ line of high emissivity coatings are black-body formulations designed to significantly improve the thermal efficiency of infrared heaters, furnaces, incinerators, and ovens used throughout the appliance, ceramics, chemical processing, metallurgical, and refining industries. Natural gas and oil savings in the range of 5-10% are typical using these coatings.

**840-C** Ceramic-based, black-pigmented coating for ceramic fiber modules and refractories to 2500 °F (1371 °C).

**840-CM** Ceramic-based, black-pigmented coating for dense refractories to 2500 °F (1371 °C) and stainless steel to 900 °F (482 °C).

**840-M** Ceramic-based, black pigmented coatings for carbon and stainless steel to 2000 °F (1093 °C).



HiE-Coat™ 840-C coats exhaust pipe insulation.



HiE-Coat™ 840-C coats ceramic fiberboard infrared heater.



HiE-Coat™ 840-M coats gas burner component.

HIGH EMISSIVITY COATINGS			
Type	INORGANIC		
Product Number	840-C	840-CM	840-M
Tradename	HiE-Coat™	HiE-Coat™	HiE-Coat™
Color (cured)	Jet Black	Jet Black	Jet Black
Maximum Temperature °F (°C)	2500 (1371)	Ceramic: 2500 (1371) Stainless: 900 (482)	2000 (1093)
No. Components	1	1	1
Viscosity, cP <sup>①</sup>	70-160	600-800	600-900
Specific Gravity, g/cc	1.60	1.54	1.54
Solids by Weight, %	58.5	48.0	50.0
Solids by volume, %	27.3	19.9	46.3
WFT, mils (microns) <sup>②</sup>	3.66 (92.9)	5.03 (127.7)	2.12 (54.9)
DFT, mils (microns) <sup>③</sup>	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
Theoretical Dry Film Coverage <sup>④</sup> @ 1 mil, ft <sup>2</sup> /gal (m <sup>2</sup> /liter)	438 (10.8)	319 (7.8)	742 (18.2)
Curing, Min Air Set, Hrs <sup>⑤</sup>	1.0-2.0	1.0	1.0
Curing, Heat Cure, °F, Hrs	200, 1	200, 0.5 + 500 / 1	200, 1 + 500 / 1
Application Temperature, °F	50-90	50-90	50-90
Thinner	840-C-T	840-CM-T	840-M-T
Flash Point, °F/°C	NA	NA	NA
Volatiles, lbs/gal	0.0	0.0	0.0
Shelf Life, months	6	6	6
Storage Temperature, °F	55-85	55-85	55-85

### Reference Notes

- ① Viscosity is measured using a Brookfield LV Viscometer.
- ② Estimated Wet Film Thickness (WFT).
- ③ Recommended Dry Film Thickness (DFT).
- ④ Actual coverage will vary depending on material losses during mixing and application.
- ⑤ Where a value is provided for "Min Air Set", it is recommended that the coating set at room temperature for, at minimum, the specified time prior to curing.

### Surface Preparation Notes

All surfaces should be free of oil, grease, dirt, corrosives, oxides, paints or other foreign matter. No further preparation is required when coating ceramics, refractories or graphites. Quartz should be sandblasted whenever possible. Smooth metal surfaces should be sandblasted or etched using Aremco's Corr-Prep CPR2000.

### Abbreviations

NA - Not Applicable  
 NR - Not Required  
 DFT - Dry Film Thickness  
 WFT - Wet Film Thickness