

NanoChar

epoxy based intumescent fire protection



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Product Technical Bulletin

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Product Description NanoChar is a high performance, 100% Solids, two component epoxy intumescent fireproofing system. NanoChar can be spray applied as a high build coating or cast into molded fireproof cladding components.

Suitable for protection of steel, aluminum or composites from cellulosic and hydrocarbon fires.

Intended Uses NanoChar is not limited to, but is intended to protect structural steel, vessels, piping, and wiring in a hydrocarbon fire to extend their functional integrity for a specific period of time.

Recommended Applications

- Petrochemical Plants and Offshore Oil & Gas Operations
 - Structural Steel Columns and Beams
 - Divisions and Decks
 - Vessels
 - Piping and Valves
 - Wiring and Actuators

General Information	Finish & Color	Semi-gloss / Grey
	VOC Content, (EPA Method 24)	0.11% wt.
	Mix Ratio, A:B	2.8 : 1 by volume 3.0 : 1 by weight
	Density, spray applied	~ 1.05 g/cc ~ 8.8 lb/gal
	Shelf Life	~ 12 months @ 77°F (25°C)
	Pot Life, 1 qt.	~ 1.0 hour @ 77°F (25°C)
	Typical Thickness	3 - 20 mm - depending on requirements

Application Method NanoChar can be spray applied from commercially available heated plural component proportioning systems. Pre-weighed kits are available that permit manual mixing for single leg spray equipment or application by hand trowels.

Product Appearance

Part A

Highly viscous, thixotropic mixture dark grey.
Becomes more flowable with mixing and heating.

Part B

Viscous thixotropic mixture cream color.
Becomes very flowable with mixing and heating.

**Recommend Application
Conditions**

Temperature
Humidity

40°F - 100°F (4°C - 38°C)
to 85 %

Typical Cure Times Cure times are temperature, humidity and coating thickness dependent.

5 mm thickness @ 50% Relative Humidity

	40°F(4°C)	70°F(21°C)	100°F(38°C)
Pot life	4 hrs.	1 hr.	30 min.
To touch	12- 16hrs.	4hrs.	3hrs.
To handle	36 hrs.	24 hrs.	16 hrs.
To recoat, min	0	0	0
To recoat, max	30 days	21 days	14 days
Cure for Service	10 days	7 days	5 days

If maximum recoat time is exceeded abrade surface before recoating.

Physical Properties Density, ASTM D1475

PartA	1.23 g/cc (10.3 lbs/gal)
Part B	1.14 g/cc (9.5 lbs/gal)
Mixed, A&B	~1.2 g/cc (10.0 lbs/gal)
Cured A & B, spray applied	1.05 g/cc

Performance Properties* Surface Burning Characteristics, ASTM E84

Flame Spread	25
Smoke Generation	90
Shore D	72

Tensile Properties, ASTM D638

Strength, psi	1800
Modulus, ksi	200

Flexural Properties, ASTM D790

Strength, psi	2800
Modulus, ksi	210

Compression Properties, ASTM D695

Strength, psi	2500
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Lap Shear Strength, ASTM D1002

Strength, psi	1400
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Impact Strength, ASTM D256

Energy Absorbed, J/cm	0.63
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Moisture Absorption, ASTM D570 Immersion, 31 days @25°C - wt gain, %2.6

Smoke & Toxicity Index IMO FTP code Annex.1, pt 2 Toxicity- **Pass**

Smoke-Primary Deck/floor - Pass

*These are typical values and are not to be construed as specifications