

NOVAGUARD™ 810 ER

DESCRIPTION

Two-component, solvent-free, amine rapid-cured novolac phenolic epoxy coating

PRINCIPAL CHARACTERISTICS

- Rapid cure and return-to-service
- Cures at temperatures down to -7°C (20°F)
- Good chemical resistance against a wide range of chemicals and solvents
- Smooth finish and light color for easy cleaning and inspection
- Hydrocarbon immersion after only 1 day at 20°C (68°F)
- Qualification for MIL-PRF-23236D Type VII: Class 5/18, 7/18, 17/18, 19/18
- Meets NSF/ANSI Standard 61 for potable water when applied and used as described on <http://info.nsf.org/>

COLOR AND GLOSS LEVEL

- Cream OAP (Off-white base + Yellow cure), Green OAP (Green base + Neutral cure), Red Oxide OAP (Red oxide base + Neutral cure), Off-white OAP (Off-white base + Neutral cure)
- Semi-gloss

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Volume solids	100%
VOC (Supplied)	EPA Method 24: 61.0 g/ltr (0.5 lb/USgal)
Recommended dry film thickness	20.0 - 40.0 mils (500 - 1000 µm) depending on system
Theoretical spreading rate	80 ft ² /US gal for 20.0 mils (2.0 m ² /l for 500 µm)
Dry to touch	2 hours
Overcoating Interval	Minimum: 6 hours Maximum: 28 days
Full cure after	48 hours
Shelf life	Base: at least 24 months when stored cool and dry Hardener: at least 24 months when stored cool and dry

Notes:

- Volume solids based on oven solids testing is 93%
- See ADDITIONAL DATA - Spreading rate and film thickness
- See ADDITIONAL DATA - Overcoating intervals
- See ADDITIONAL DATA - Curing time



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RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Substrate conditions

- Steel; blast cleaned to a minimum of SSPC-SP10 or ISO-SA2½, blasting profile 50 – 125 µm (5.0 mils) (2.0 – 5.0 mils)
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Substrate temperature and application conditions

- Substrate temperature during application and curing down to -7°C (20°F) is acceptable; provided the substrate is free from ice and dry
 - Substrate temperature during application and curing should be at least 3°C (5°F) above dew point
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INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 80:20 (4:1)

- The temperature of the mixed base and hardener should preferably be above 75°F (24°C)
 - At lower temperature, the viscosity will be too high for spray application
 - No thinner should be added
 - For recommended application instructions, see working procedure
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Induction time

None

Airless spray

- Use heated, airless spray, plural-component equipment
- In-line heating or insulated hoses may be necessary to avoid cooling down of paint in hoses at low air temperature
- Length of hoses should be as short as possible

Recommended thinner

No thinner should be added

Nozzle orifice

Approx. 0.48 – 0.53 mm (0.019 – 0.021 in)

Nozzle pressure

3500 - 4250 p.s.i. (approx. 242 - 293 bar; 24.1 - 29.3 MPa)

Notes:

- For optimal flow and leveling on horizontal areas having a substrate temperature below 20°C (68°F), the paint temperature (spray fan) should be kept typically below 30°C (86°F). The distance between the spray gun and the substrate should be low, for example less than 50 cm (20 inch)
 - For optimal flow and sag resistance on vertical areas having a substrate temperature above 20°C (68°F), the paint temperature (spray fan) should be kept typically above 30°C (86°F)
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Cleaning solvent

THINNER 90-53 or THINNER 90-83

Note: All application equipment must be cleaned immediately after use. Paint inside the spraying equipment must be removed before the pot life has been expired.

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	Theoretical spreading rate
20.0 mils (500 µm)	80 ft ² /US gal (2.0 m ² /l)
30.0 mils (750 µm)	53 ft ² /US gal (1.3 m ² /l)

Measuring wet film thickness

- A difference is often obtained between the measured apparent WFT and the real applied WFT. This is due to the thixotropy and the surface tension of the paint, which retards the release of air, trapped in the paint film for some time
- Polymer shrinkage will also affect the final dry film thickness reading. A practical volume solids of 93% is therefore used for estimation of spreading rate

Measuring dry film thickness

- The DFT should be measured using a calibration foil of known thickness placed in between the coating and the measuring device

Overcoating interval for DFT up to 1000 µm (40.0 mils)							
Overcoating with...	Interval	-5°C (23°F)	0°C (32°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
itself	Minimum	48 hours	24 hours	12 hours	6 hours	4 hours	3 hours
	Maximum	28 days	28 days	28 days	22.5 days	14 days	7 days

Note: Surface should be dry and free from any contamination and ice

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Curing time for DFT up to 1000 µm (40.0 mils)		
Substrate temperature	Dry to handle	Full cure
40°F (4°C)	18 hours	5 days
50°F (10°C)	12 hours	3 days
68°F (20°C)	6 hours	48 hours
86°F (30°C)	4.5 hours	30 hours
104°F (40°C)	less than 3 hours	24 hours

Notes:

- Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)
- For storage and transport of drinking water the recommended working procedure should be followed
- Holiday test can be done after dry to handle time

Pot life (at application viscosity)	
Mixed product temperature	Pot life
77°F (25°C)	15 minutes
110°F (43°C)	7 minutes

Note: It is recommended to use plural airless equipment due to the short pot life

Product Qualifications

- Compliant with EI 1541, Performance requirements for protective coating systems used in aviation fuel storage tanks and piping

SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets
- Although this is a solvent-free paint, care should be taken to avoid inhalation of spray mist, as well as contact between the wet paint and exposed skin or eyes
- No solvent present; however, spray mist is not harmless, a fresh air mask should be used during spraying
- Ventilation should be provided in confined spaces to maintain good visibility

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective and Marine Coatings to supply the same product on a worldwide basis. However, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.



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REFERENCES

• CONVERSION TABLES	INFORMATION SHEET	1410
• EXPLANATION TO PRODUCT DATA SHEETS	INFORMATION SHEET	1411
• SAFETY INDICATIONS	INFORMATION SHEET	1430
• SAFETY IN CONFINED SPACES AND HEALTH SAFETY, EXPLOSION HAZARD – TOXIC HAZARD	INFORMATION SHEET	1431
• SAFE WORKING IN CONFINED SPACES	INFORMATION SHEET	1433
• DIRECTIVES FOR VENTILATION PRACTICE	INFORMATION SHEET	1434
• CLEANING OF STEEL AND REMOVAL OF RUST	INFORMATION SHEET	1490
• SPECIFICATION FOR MINERAL ABRASIVES	INFORMATION SHEET	1491
• RELATIVE HUMIDITY – SUBSTRATE TEMPERATURE – AIR TEMPERATURE	INFORMATION SHEET	1650

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