NOVAGUARD™ 840

DESCRIPTION

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

PRINCIPAL CHARACTERISTICS

- Suitable for heavy H2S wastewater environments
- Suitable for use on primed steel or direct to concrete/masonry
- Good visibility due to light color
- Glossy and smooth appearance
- Reduced explosion risk and fire hazard
- Suitable for storage of unleaded gasolines
- Good chemical resistance against a wide range of chemicals and solvents
- A clear (semi-transparent) version is available for systems reinforced with chopped glass fibers or glass fiber mats
- Excellent resistance to crude oil up to 120°C (250°F)
- Can be applied by heavy-duty, single-feed, airless spray equipment (60:1)
- Meets the requirements of EI 1541 2.2 (coating systems for aviation fuel storage tanks and pipes)
- Meets NSF/ANSI Standard 61 for potable water when applied and used as described on http://info.nsf.org/
- Complies with FDA 21 CFR 175.300 criteria for food contact

COLOR AND GLOSS LEVEL

- Green, cream, clear (semi-transparent)
- Gloss

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.3 kg/l (10.8 lb/US gal)
Volume solids	100%
VOC (Supplied)	Directive 2010/75/EU, SED: max. 106.0 g/kg max. 142.0 g/l (approx. 1.2 lb/US gal) EPA Method 24: 73.0 g/ltr (0.6 lb/USgal) China GB 30981-2020 (tested) 25.0 g/l (approx. 0.2 lb/gal)
Recommended dry film thickness	300 - 600 µm (12.0 - 24.0 mils) depending on system
Theoretical spreading rate	3.3 m^2/l for 300 µm (134 ft^2/US gal for 12.0 mils)
Dry to touch	6 hours
Overcoating Interval	Minimum: 24 hours Maximum: 2 months
Full cure after	5 days

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Data for mixed product	
Shelf life	Base: at least 24 months when stored cool and dry Hardener: at least 24 months when stored cool and dry

Notes:
- See ADDITIONAL DATA – Spreading rate and film thickness
- See ADDITIONAL DATA – Overcoating intervals
- See ADDITIONAL DATA – Curing time

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Carbon steel

- Steel; blast cleaned to a minimum of SSPC-SP10 or ISO-SA2½ , blasting profile 50 – 125 µm (2.0 – 5.0 mils)
- Steel with suitable primer (NOVAGUARD 260 or PHENGUARD 930) must be dry and free from any contamination

Concrete

- Remove grease, oil and other penetrating contaminants according to ASTM D4258
- Abrade the surface per ASTM D4259 to remove all chalk and surface glaze or laitance. Achieve surface profile - ICRI CSP 3 to 5
- NOVAGUARD 840 with PPG 884 Additive or AMERCOAT 114A may be used as a pit filler for certain applications. Check with PPG Technical Service for guidance on chemical resistance
- Maximum recommended moisture transmission rate is 3 lbs / 1,000 ft2 / 24 hours by moisture transmission test (ASTM F1869, calcium chloride test or by ASTM D4263, plastic sheet test)
- Moisture content should not exceed 4% (ASTM D4944, Calcuim Carbide Gas method)

Substrate temperature and application conditions

- Substrate temperature during application and curing should be above 5°C (41°F)
- Substrate temperature during application and curing should be at least 3°C (5°F) above dew point

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 at least 20°C (68°F)
- At lower temperature, the viscosity will be too high for spray application
- No thinner should be added
- For recommended application instructions, see working procedure

Induction time

None

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Pot life
1 hour at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life

Airless spray
- Use heavy-duty, single-feed, airless spray equipment, preferably 60:1 pump ratio and suitable high-pressure hoses

Recommended thinner
No thinner should be added

Nozzle orifice
Approx. 0.53 mm (0.021 in)

Nozzle pressure
At 20°C (68°F) paint temperature min. 28.0 MPa (approx. 280 bar; 4061 p.s.i.). At 30°C (86°F) min. 22.0 MPa (approx. 220 bar; 3191 p.s.i.)

Note: Use heavy-duty, single-feed, airless spray equipment, preferably 60:1 pump ratio and suitable high-pressure hoses

Brush/roller
- Brush: for stripe coating and spot repair only

Recommended thinner
No thinner should be added

Cleaning solvent
THINNER 90-53 or THINNER 90-83

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

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	**Theoretical spreading rate**
300 µm (12.0 mils)	3.3 m^2/l (134 ft^2/US gal)
600 µm (24.0 mils)	1.7 m^2/l (67 ft^2/US gal)

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
- Recommendation is to apply a WFT, which is equal to the specified DFT plus 60 µm (2.4 mils)

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Overcoating interval for DFT up to 600 µm (24.0 mils)					
Overcoating with...	**Interval**	**5°C (41°F)**	**10°C (50°F)**	**20°C (68°F)**	**30°C (86°F)**
itself	Minimum	3.5 days	36 hours	24 hours	16 hours
	Maximum	3 months	3 months	2 months	1 month

Note: Surface should be dry and free from any contamination

Curing time for DFT up to 600 µm (24.0 mils)	
Substrate temperature	**Service- water immersion**
5°C (41°F)	4 days
10°C (50°F)	45 hours
20°C (68°F)	24 hours
30°C (86°F)	15 hours
40°C (104°F)	9 hours

Curing time for DFT up to 600 µm (24.0 mils)		
Substrate temperature	**Dry to walk on**	**Resistant to vehicular service**
5°C (41°F)	3 days	N/A
10°C (50°F)	36 hours	N/A
20°C (68°F)	20 hours	N/A
30°C (86°F)	12 hours	N/A
40°C (104°F)	8 hours	N/A

Curing time for DFT up to 600 µm (24.0 mils)			
Substrate temperature	**Dry to handle**	**Minimum cure time for purely aliphatic petroleum product (see note)**	**Minimum cure time for all other chemicals**
5°C (41°F)	60 hours	6.5 days	15 days
10°C (50°F)	30 hours	3 days	7 days
20°C (68°F)	16 hours	40 hours	5 days
30°C (86°F)	10 hours	25 hours	3 days
40°C (104°F)	6 hours	15 hours	48 hours

Notes:
- Gasoline or gasoline/alcohol blends are not included in purely aliphatic petroleum products, please contact your PPG representative for further details
- Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)

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Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
10°C (50°F)	2 hours
20°C (68°F)	1 hour
30°C (86°F)	45 minutes

Note: Due to exothermic reaction, temperature during and after mixing may increase

Product Qualifications

- Qualified for ANSI/NSF Standard 61 (potable water). For NSF application instructions, please visit the following website: http://www.nsf.org/certified-products-systems/
- Compliant with USDA Incidental Food Contact Requirements

SAFETY PRECAUTIONS

- 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
- Ventilation should be provided in confined spaces to maintain good visibility
- If workers are exposed to concentrations above the exposure limit, they must use appropriate personal protective equipment (PPE).

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.

REFERENCES

- EXPLANATION TO PRODUCT DATA SHEETS — INFORMATION SHEET — 1411

WARRANTY

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