

NOVAGUARD™ 840

DESCRIPTION

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

PRINCIPAL CHARACTERISTICS

- One-coat tank coating system
 - Clear version for glass-mat reinforced, solvent-free tank bottom system (see SYSTEM SHEET 4145)
 - Excellent resistance to crude oil up to 120°C (250°F)
 - Suitable for storage of unleaded gasolines
 - Good chemical resistance against a wide range of chemicals and solvents
 - Good visibility due to light color
 - Glossy and smooth appearance
 - Easy to clean
 - Can be applied by heavy-duty, single-feed, airless spray equipment (60:1)
 - Reduced explosion risk and fire hazard
 - Approved to Air BP F2D2 section 2.1 for the storage of jet fuels
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COLOR AND GLOSS LEVEL

- Green, cream, clear
 - Gloss
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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 1999/13/EC, 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)
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
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

Substrate conditions

- Steel; blast cleaned to ISO-Sa2½, blasting profile 50 – 100 µm (2.0 – 4.0 mils)
- Steel with suitable primer (SIGMAGUARD 260) must be dry and free from any contamination

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/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. 0.53 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.)

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
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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)

Note: Maximum DFT when brushing: 150 µm (6.0 mils)



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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)

Measuring dry film thickness

- Because of low initial hardness the DFT cannot be measured within some days, due to the penetration of the measuring device into the soft paint film
- 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 300 µm (12.0 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 300 µm (12.0 mils)		
Substrate temperature	Dry to handle	Full cure
5°C (41°F)	60 hours	15 days
10°C (50°F)	30 hours	7 days
20°C (68°F)	16 hours	5 days
30°C (86°F)	10 hours	3 days

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

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Washing procedures

- All personnel should wear watertight suits, boots and gloves properly cleaned with a sodium hypochlorite solution (1% active chlorine per liter)
- All tank sides, bottom and deckheads etc. should be brush cleaned or high-pressure spray cleaned with 1% active chlorine solution as above|note: this can also be done by butterworth washing
- All parts should be high pressure cleaned with tap water and tanks drained
- Concentrated active chlorine solution should be sprinkled on bottom; approx. 1 liter per 10 m² (1 quart per 100 ft²)
- Tanks should be filled with tap water to a depth of approx. 20 cm (8 inches) and the water should remain in the tank for at least 2 hours (max. 24 hours)
- Tanks should be thoroughly flushed out with tap water
- Depending upon local regulations it may be necessary to take water samples, after filling tank completely, to check on bacteria
- After this procedure the tanks will be fit to carry drinking water

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

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

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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