



NOVAGUARD 840

5 pages

March 2011
Revision of April 2009

DESCRIPTION two component solvent free amine cured novolac phenolic epoxy coating

PRINCIPAL CHARACTERISTICS

- one coat tank coating system
- clear version for glassmat reinforced solvent free tank bottom system (see system sheet 4145)
- excellent resistance to crude oil up to 90°C
- suitable for storage of unleaded gasolines
- good chemical resistance against a wide range of chemicals and solvents
- good visibility due to light colour
- 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

COLOURS AND GLOSS green, cream, clear - gloss

BASIC DATA AT 20°C (1 g/cm³ = 8.25 lb/US gal; 1 m²/l = 40.7 ft²/US gal)
(data for mixed product)

Mass density 1.3 g/cm³
Volume solids 100%
VOC (supplied) max. 106 g/kg (Directive 1999/13/EC, SED)
max. 142 g/l (approx. 1.2 lb/gal)
73 g/ltr (0.9 lb/gal) (by EPA Method 24)
see information sheet 1411

Recommended dry film thickness 300 - 600 µm depending on system
Theoretical spreading rate 3.3 m²/l for 300 µm *
Touch dry after 6 hours
Overcoating interval min. 24 hours *
max. 2 months *
Full cure after 5 days *

(data for components)

Shelf life (cool and dry place) at least 12 months
* see additional data

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- steel; blast cleaned to a minimum of ISO-Sa2½, blasting profile 50 - 100 µm
- substrate temperature must be above 5°C and at least 3°C above dew point during application and curing
- steel with suitable primer (SigmaGuard 260) which must be dry, clean and free from any contamination

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INSTRUCTIONS FOR USE

mixing ratio by volume: base to hardener 80 : 20

- the temperature of the mixed base and hardener should preferably be at least 20°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

Induction time

none

Pot life

1 hour at 20°C *

* see additional data

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 (paint temperature) min. 28 MPa (= approx. 280 bar; 4000 p.s.i.)

at 30°C (paint temperature) min. 22 MPa (= approx. 220 bar; 3000 p.s.i.)

BRUSH/ROLLER

for stripe coating and spot repair only

Recommended thinner

no thinner should be added

CLEANING SOLVENT

Thinner 90-83 (preferred) or Thinner 90-53

- all equipment used for application must be cleaned immediately after use
- paint inside the spraying equipment must be removed before the pot life time has been expired

SAFETY PRECAUTIONS

for paint and recommended thinners see safety 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

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ADDITIONAL DATA

Film thickness and spreading rate

theoretical spreading rate m ² /l	3.3	1.7
dft in µm	300	600

max. dft when brushing: 150 µm

measuring wet film thickness

- a deviation 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

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 with Novaguard 840 (spot repair and stripe coating)

substrate temperature	5°C	10°C	20°C	30°C
minimum interval	80 hours	36 hours	24 hours	16 hours
maximum interval	3 months	3 months	2 months	1 month

- surface should be dry and free from any contamination

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Curing table

substrate temperature	dry to handle	full cure
5°C	60 hours	15 days
10°C	30 hours	7 days
20°C	16 hours	5 days
30°C	10 hours	3 days

- adequate ventilation must be maintained during application and curing (please refer to sheets 1433 and 1434)
- for storage and transport of drinking water the recommended working procedure should be followed

WASHING PROCEDURE

- 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 ltr/10 m²
- tanks should be filled with tap water to a depth of approx. 20 cm 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)

20°C	60 min.
30°C	45 min.

- due to exothermic reaction, temperature during and after mixing may increase

Worldwide availability

Whilst it is always the aim of PPG Protective & Marine Coatings to supply the same product on a worldwide basis, 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

Explanation to product data sheets	see information sheet 1411
Safety indications	see information sheet 1430
Safety in confined spaces and health safety	
Explosion hazard - toxic hazard	see information sheet 1431
Safe working in confined spaces	see information sheet 1433
Directives for ventilation practice	see information sheet 1434
Cleaning of steel and removal of rust	see information sheet 1490
Specification for mineral abrasives	see information sheet 1491

LIMITATION OF LIABILITY

The information in this data sheet is based upon laboratory tests we believe to be accurate and is intended for guidance only. All recommendations or suggestions relating to the use of the Sigma Coatings products made by PPG Protective & Marine Coatings, whether in technical documentation, or in response to a specific enquiry, or otherwise, are based on data which to the best of our knowledge are reliable. The products and information are designed for users having the requisite knowledge and industrial skills and it is the end-user's responsibility to determine the suitability of the product for its intended use.

PPG Protective & Marine Coatings has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. PPG Protective & Marine Coatings does therefore not accept any liability arising from loss, injury or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise).

The data contained herein are liable to modification as a result of practical experience and continuous product development.

This data sheet replaces and annuls all previous issues and it is therefore the user's responsibility to ensure that this sheet is current prior to using the product.

The English text of this document shall prevail over any translation thereof.

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