

# SIGMA NOVAGUARD 840

6 pages

April 2007  
Revision of February 2006

<b>DESCRIPTION</b>	two component solvent free amine cured phenolic epoxy coating
<b>PRINCIPAL CHARACTERISTICS</b>	<ul style="list-style-type: none"> <li>- one coat tank coating system</li> <li>- clear version is the basis for the glassmat reinforced solvent free tank bottom system (see system sheet 4145)</li> <li>- excellent resistance to crude oil up to 194°F (90°C)</li> <li>- suitable for storage of unleaded gasolines</li> <li>- good chemical resistance against a wide range of chemicals and solvents</li> <li>- good visibility due to light color</li> <li>- glossy and smooth appearance</li> <li>- easy to clean</li> <li>- can be applied by heavy duty single feed airless spray equipment (60:1)</li> <li>- reduced explosion risk and fire hazard</li> <li>- approved to Air BP F2D2 section 2.1 for the storage of jet fuels</li> </ul>
<b>COLORS AND GLOSS</b>	green, cream, clear - gloss
<b>BASIC DATA AT 68°F</b>	(8.25 lb/US gal = 1 g/cm <sup>3</sup> ; 40.7 ft <sup>2</sup> /US gal = 1 m <sup>2</sup> /l) (data for mixed product)
Mass density	10.85 lbs/gal (1.3 g/cm <sup>3</sup> )
Solids content	100%
VOC (supplied - EPA 24)	max. 106 g/kg (Directive 1999/13/EC, SED) max. 1.2 lb/gal (approx. 142 g/l) see information sheet 1411
Recommended dry film thickness	12 - 24 mils (300 - 600 µm) depending on system
Theoretical spreading rate	134 ft <sup>2</sup> /gal (3.3 m <sup>2</sup> /l) for 12 mils (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

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## RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- steel; blast cleaned to a minimum of SSPC SP10/NACE 2 (ISO-Sa2½), blasting profile (R<sub>z</sub>) 2 - 4 mils (50 - 100 µm)
- substrate temperature must be above 41°F (5°C) and at least 5°F (3°C) above dew point during application and curing
- steel with suitable primer (Sigma Phenguard 930) which must be dry, clean and free from any contamination

## 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 68°F (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 68°F (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. 0.021" inch (= 0.53 mm)

Nozzle pressure

at 68°F (20°C) (paint temperature) min. 4000 p.s.i.

(= approx. 28 Mpa or 280 bar)

at 86°F (30°C) (paint temperature) min. 3000 p.s.i.

(= approx. 22 MPa or 220 bar)

## BRUSH/ROLLER

for stripe coating and spot repair only

Recommended thinner

no thinner should be added

## CLEANING SOLVENT

Sigma thinner 90-83 (preferred) or Sigma 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

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## 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

## ADDITIONAL DATA

### *Film thickness and spreading rate*

theoretical	134 (3.3)	69 (1.7)
spreading rate ft <sup>2</sup> /gal (m <sup>2</sup> /l)		
dft in mil (µm)	12 (300)	24 (600)

max. dft when brushing: 6 mils (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 2 mils (50 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

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***Overcoating with Sigma Novaguard 840 (spot repair and stripe coating)***

substrate temperature	41°F (5°C)	50°F (10°C)	68°F (20°C)	86°F (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

***Curing table***

substrate temperature	dry to handle	full cure
41°F (5°C)	60 hours	15 days
50°F (10°C)	30 hours	7 days
68°F (20°C)	16 hours	5 days
86°F (30°C)	10 hours	3 days

- adequate ventilation must be maintained during application and curing (please refer to sheet 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 quart/100 ft<sup>2</sup> (1 ltr/10 m<sup>2</sup>)
- tanks should be filled with tap water to a depth of approx. 8 inches (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

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**Pot life (at application viscosity)**

68°F (20°C)	60 min.
86°F (30°C)	45 min.

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

**Worldwide availability**

Whilst it is always the aim of SigmaKalon Marine & Protective 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.

**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

