



# PHENGUARD 940

5 pages

July 2012  
Revision of March 2011

<b>Description</b>	two component high build amine adduct cured novolac phenolic epoxy finish
<b>PRINCIPAL CHARACTERISTICS</b>	<ul style="list-style-type: none"> <li>– finish coat in the Phenguard tankcoating system</li> <li>– excellent resistance to a wide range of organic acids, alcohols, edible oils, fats (regardless of free fatty acid content) and solvents</li> <li>– maximum cargo flexibility</li> <li>– low cargo absorption</li> <li>– good resistance to hot water</li> <li>– recognized corrosion control coating (Lloyd's register), see sheet 1886</li> <li>– good application properties, resulting in a smooth surface</li> <li>– easy to clean</li> </ul>
<b>COLOURS AND GLOSS</b>	light grey – eggshell
<b>BASIC DATA AT 20 °C</b>	(1 g/cm <sup>3</sup> = 8.35 lb/US gal; 1 m <sup>2</sup> /l = 40.7 ft <sup>2</sup> /US gal) (data for mixed product)
Mass density	1.7 g/cm <sup>3</sup>
Volume solids	66% ± 2%
VOC (Directive 1999/13/EC, SED)	max. 191 g/kg (Directive 1999/13/EC, SED)
VOC (UK PG 6/23(92) appendix 3)	max. 315 g/l (approx. 2.6 lb/gal)
Recommended dry film thickness	100 µm *
Theoretical spreading rate	6.6 m <sup>2</sup> /l for 100 µm *
Touch dry after	2 hours at 20 °C
Overcoating interval	min. 24 hours * max. 21 days *
Full cure after	see curing table * at 20 °C * see additional data
Shelf life (cool and dry place)	at least 12 months * see additional data
<b>RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES</b>	<ul style="list-style-type: none"> <li>– previous coat of Phenguard 935; dry and free from any contamination</li> <li>– the substrate must be perfectly dry before and during application of Phenguard 940</li> <li>– substrate temperature must be above 10°C and at least 3°C above dew point during application and curing</li> </ul>

# PHENGUARD 940

July 2012

## SYSTEM SPECIFICATION

marine  
tankcoatings

system sheet: 3141  
system sheet: 3322

## INSTRUCTIONS FOR USE

mixing ratio by volume: base to hardener 88 : 12

- the temperature of the mixed base and hardener should preferably be above 15°C, otherwise extra solvent may be required to obtain application viscosity
- too much solvent results in reduced sag resistance and slower cure
- thinner should be added after mixing the components

Pot life

4 hours at 20 °C \*

\*see additional data

Induction time

- allow induction time before use
- 15°C - 20 min.
- 20°C - 15 min.
- 25°C - 10 min.

## AIR SPRAY

Recommended thinner

Thinner 91-92

Volume of thinner

0 - 10%, depending on required thickness and application conditions

Nozzle orifice

2 mm

Nozzle pressure

0.3 MPa (= approx. 3 bar; 44 p.s.i.)

## AIRLESS SPRAY

Recommended thinner

Thinner 91-92

Volume of thinner

0 - 10%, depending on required thickness and application conditions

Nozzle orifice

approx. 0.46 - 0.53 mm (= 0.018 - 0.021 in)

Nozzle pressure

15 MPa (= approx. 150 bar; 2176 p.s.i.)

## BRUSH/ROLLER

Recommended thinner

Thinner 91-92

Volume of thinner

0 - 5%

## CLEANING SOLVENT

Thinner 90-53

### Film thickness and spreading rate

theoretical spreading rate m <sup>2</sup> /l	6.6	5.3
dft in µm	100	125

Maximum dft when brushing: 60 µm

# PHENGUARD 940

July 2012

### Overcoating table for Phenguard 940

substrate temperature	10°C	15°C	20°C	30°C	40°C
minimum interval	36 hours	32 hours	24 hours	16 hours	12 hours
maximum interval	28 days	25 days	21 days	14 days	7 days

- surface should be dry and free from any contamination

### Curing

#### Min.curing time of Phenguard tankcoating system before transport of cargoes without note 4, 7, 8 or 11 and ballast water and tanktest with sea water

substrate temperature	Service
10°C	14 days
15°C	14 days
20°C	10 days
30°C	7 days
40°C	5 days

- minimum curing time of Phenguard tankcoating system before transport of cargoes with note 4, 7, 8 or 11: 3 months
- for detailed information on resistance and resistance notes, please refer to the latest issue of the Cargo Resistance List
- for transport of methanol and vinyl acetate monomer, a hot cure is required which cannot be substituted by a service period of 3 months with non-aggressive cargoes
- adequate ventilation must be maintained during application and curing (please refer to sheets 1433 and 1434)
- the performance of the applied system strongly depends on the curing degree of the first coat at time of recoating. Therefore overcoating time between 1st and 2nd coat is extended in comparison between 2nd and 3rd coat (see overcoating details)

#### Pot life (at application viscosity)

10 °C	6 hours
20 °C	4 hours
30 °C	1.5 hour

### Worldwide availability

Whilst it is always the aim of Sigma 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.

---

# PHENGUARD 940

---

July 2012

## REFERENCES

Conversion labels	see information sheet 1410
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
Relative humidity - substrate temperature - air temperature	see information sheet 1650

## SAFETY PRECAUTIONS

- for paint and recommended thinners see safety sheets 1430, 1431 and relevant material safety data sheets
- this is a solvent borne paint and care should be taken to avoid inhalation of spray mist or vapour as well as contact between the wet paint and exposed skin or eyes

# PHENGUARD 940

July 2012

## WARRANTY

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product.

THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG.

Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

## LIMITATIONS OF LIABILITY

**IN NO EVENT WILL PPG BE LIABLE UNDER ANY THEORY OF RECOVERY (WHETHER BASED ON NEGLIGENCE OF ANY KIND, STRICT LIABILITY OR TORT) FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO, ARISING FROM, OR RESULTING FROM ANY USE MADE OF THE PRODUCT.**

The information in this data sheet is intended for guidance only and is based upon laboratory tests that PPG believes to be reliable. PPG may modify the information contained herein at any time as a result of practical experience and continuous product development. All recommendations or suggestions relating to the use of the PPG product, whether in technical documentation, or in response to a specific inquiry, or otherwise, are based on data, which to the best of PPG's knowledge, is reliable. The product and related information is designed for users having the requisite knowledge and industrial skills in the industry and it is the end-user's responsibility to determine the suitability of the product for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk.

PPG has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, PPG does not accept any liability arising from any loss, injury or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise). Variations in the application environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results.

This data sheet supersedes all previous versions and it is the Buyer's responsibility to ensure that this data sheet is current prior to using the product. Current data sheets for all PPG Protective & Marine Coatings products are maintained at [www.ppgmc.com](http://www.ppgmc.com).

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

179118	PDS grey	7436 5000002200
--------	-------------	--------------------