# PHENGUARD 940

Globally Available

5 pages

July 2012
Revision of March 2011

**Description**

two component high build amine adduct cured novolac phenolic epoxy finish

**PRINCIPAL CHARACTERISTICS**

- finish coat in the Phenguard tankcoating system
- excellent resistance to a wide range of organic acids, alcohols, edible oils, fats (regardless of free fatty acid content) and solvents
- maximum cargo flexibility
- low cargo absorption
- good resistance to hot water
- recognized corrosion control coating (Lloyd's register), see sheet 1886
- good application properties, resulting in a smooth surface
- easy to clean

**COLOURS AND GLOSS**

light grey – eggshell

**BASIC DATA AT 20 °C**

(1 g/cm³ = 8.35 lb/US gal; 1 m²/l = 40.7 ft²/US gal)

(data for mixed product)

| | |
|---|---|
| Mass density | 1.7 g/cm³ |
| 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 m²/l for 100 µm * |
| Touch dry after | 2 hours at 20 °C |
| Overcoating interval | min. 24 hours *<br>max. 21 days * |
| Full cure after | see curing table * at 20 °C<br>* see additional data |
| Shelf life (cool and dry place) | at least 12 months<br>* see additional data |

**RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES**

- previous coat of Phenguard 935; dry and free from any contamination
- the substrate must be perfectly dry before and during application of Phenguard 940
- substrate temperature must be above 10°C and at least 3°C above dew point during application and curing

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**SYSTEM SPECIFICATION**

| | |
|---|---|
| marine | system sheet: 3141 |
| tankcoatings | 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**

| | | |
|---|---|---|
| theoritical spreading rate m2/l | 6.6 | 5.3 |
| dft in µm | 100 | 125 |

Maximum dft when brushing: 60 µm

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**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.

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**REFERENCES**

| | |
|---|---|
| Conversion tabels | 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

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