PHENGUARD™ 940

DESCRIPTION

Two-component, high-build, amine adduct-cured novolac phenolic epoxy finish

PRINCIPAL CHARACTERISTICS

- Finish coat in the PHENGUARD tank coating 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)
- Good application properties, resulting in a smooth surface
- Easy to clean

COLOR AND GLOSS LEVEL

- Light gray
- Eggshell

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.7 kg/l (14.2 lb/US gal)
Volume solids	66 ± 2%
VOC (Supplied)	Directive 1999/13/EC, SED: max. 191.0 g/kg max. 315.0 g/l (approx. 2.6 lb/US gal)
Recommended dry film thickness	100 µm (4.0 mils)
Theoretical spreading rate	6.6 m^2/l for 100 µm (265 ft^2/US gal for 4.0 mils)
Dry to touch	2 hours
Overcoating Interval	Minimum: 24 hours Maximum: 21 days
Full cure after	See curing table
Shelf life	Base: at least 12 months when stored cool and dry Hardener: at least 12 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

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RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Substrate conditions

- Previous coat (PHENGUARD 935) must be dry and free from any contamination
- The substrate must be perfectly dry before and during application of PHENGUARD 940

Substrate temperature and application conditions

- Substrate temperature during application and curing should be above 10°C (50°F)
- Substrate temperature during application and curing should be at least 3°C (5°F) above dew point

SYSTEM SPECIFICATION

- HOT WATER RESISTANT SYSTEMS – SYSTEM SHEET 3141
- PHENGUARD TANK COATING SYSTEM – 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 (59°F), otherwise extra thinner may be required to obtain application viscosity
- Adding too much thinner results in reduced sag resistance and slower cure
- Thinner should be added after mixing the components

Induction time

Allow induction time before use

Mixed product induction time	
Mixed product temperature	**Induction time**
15°C (59°F)	20 minutes
20°C (68°F)	15 minutes
25°C (77°F)	10 minutes

Pot life

4 hours at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life

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Air spray

Recommended thinner
THINNER 91-92

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

Nozzle orifice
2.0 mm (approx. 0.079 in)

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
15.0 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

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ADDITIONAL DATA

Spreading rate and film thickness	
DFT	**Theoretical spreading rate**
100 µm (4.0 mils)	6.6 m^2/l (265 ft^2/US gal)
125 µm (5.0 mils)	5.3 m^2/l (212 ft^2/US gal)

Note: Maximum DFT when brushing: 60 µm (2.4 mils)

Overcoating interval for DFT up to 100 µm (4.0 mils)						
Overcoating with...	**Interval**	**10°C (50°F)**	**15°C (59°F)**	**20°C (68°F)**	**30°C (86°F)**	**40°C (104°F)**
itself	Minimum	36 hours	32 hours	24 hours	16 hours	12 hours
	Maximum	28 days	25 days	21 days	14 days	7 days

Note: Surface should be dry and free from any contamination

Curing time for DFT up to 100 µm (4.0 mils)	
Substrate temperature	**Minimum curing time before transport of cargoes without note 4, 7, 8 or 11 and ballast water or tank test with sea water**
10°C (50°F)	14 days
15°C (59°F)	14 days
20°C (68°F)	10 days
30°C (86°F)	7 days
40°C (104°F)	5 days

Notes:

- 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 INFORMATION 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)

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Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
10°C (50°F)	6 hours
20°C (68°F)	4 hours
30°C (86°F)	1.5 hours

SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION 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 vapor, as well as contact between the wet paint and exposed skin or eyes

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.

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

WARRANTY

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