PHENGUARD™ SUBSEA 780

DESCRIPTION

Two-component, amine adduct-cured phenolic epoxy finish

PRINCIPAL CHARACTERISTICS

- Finish coat for coating system, used for the protection of subsea equipment
- Bright color to assist location by ROV
- Excellent resistance to seawater immersion
- Very good corrosion control
- Excellent high-temperature resistance in immersed conditions
- Good application properties, resulting in a smooth surface
- Meets the requirements of Norsok M-501 rev. 6, system 7C

COLOR AND GLOSS LEVEL

- Yellow (RAL 1004, RAL 1018), Orange (RAL 2004), Offwhite (RAL 9002), other colors available on a limited basis
- Eggshell

Note: Color is approximate and will be subject to some degree of drift over time

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)	EPA Method 24: 300.0 g/ltr (2.5 lb/USgal)
Recommended dry film thickness	100 - 175 µm (4.0 - 7.0 mils) depending on system
Theoretical spreading rate	6.6 m^2/l for 100 µm (265 ft^2/US gal for 4.0 mils) 3.8 m^2/l for 175 µm (151 ft^2/US gal for 7.0 mils)
Dry to touch	2 hours
Overcoating Interval	Minimum: 3 hours Maximum: 21 days
Full cure after	See curing table
Shelf life	Base: at least 24 months when stored cool and dry Hardener: at least 24 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 of approved coating must be dry and free from any contamination
- Substrate must be dry, free from oil, grease and any contamination

Substrate temperature and application conditions

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

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 88:12

- The temperature of the paint 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

Mixed product induction time	
Mixed product temperature	**Induction time**
15°C (59°F)	20 minutes
20°C (68°F)	15 minutes
30°C (86°F)	10 minutes

Pot life

4 hours at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life

Air spray

Recommended thinner

THINNER 91-92

Volume of thinner

2 - 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.)

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Airless spray

Recommended thinner
THINNER 91-92

Volume of thinner
2 - 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.)

Cleaning solvent
THINNER 90-53

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)
175 µm (7.0 mils)	3.8 m^2/l (151 ft^2/US gal)

Overcoating interval for DFT up to 175 µm (7.0 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	16 hours	6 hours	3 hours	3 hours	2 hours
	Maximum	28 days	25 days	21 days	14 days	7 days

Notes:
- Surface should be dry and free from any contamination
- When needs to walk on for topcoat, min. recoat time should be same as dry to handle time to avoid damage on coated system

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Curing time for DFT up to 175 µm (7.0 mils)		
Substrate temperature	**Dry to handle**	**Full cure**
10°C (50°F)	16 hours	5 days
15°C (59°F)	12 hours	4 days
20°C (68°F)	8 hours	3 days
30°C (86°F)	6 hours	48 hours

Note: Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)

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
40°C (104°F)	30 minutes

Product Qualifications

- Qualified for NORSOK M501 Rev.7 System 7C up to 150°C(302°F) with 3 coating system (Phenguard 985 / 985 / Phenguard Subsea 780 system)
- Qualified for NORSOK M501 Rev.7 System 7C up to 180°C(356°F) with 2 coating system (Phenguard Subsea 610 / 780 system)
- Qualified for NORSOK M501 Rev.7 System 7C up to 180°C(356°F) with 3 coating system (Phenguard Subsea 610 / 780 / 780 system)

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.

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REFERENCES

• 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
• DIRECTIVES FOR VENTILATION PRACTICE	INFORMATION SHEET	1434
• APPLICATION GUIDELINES FOR PHENGUARD SUBSEA SYSTEMS	INFORMATION SHEET	P110

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