New Guard Coatings Group

A global reputation to protect.

The information herewith is given with the best of New Guard Coatings Group knowledge.

Rights are reserved to change and update the data without notice.

This information is not exhaustive and it is the user's responsibility to ensure that this data sheet is the most current by contacting their local New Guard Coatings Group branch prior to using the coating/product.

# PHENGUARD™ SUBSEA 610

## DESCRIPTION

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

## PRINCIPAL CHARACTERISTICS

- Subsea primer for 2-coat system with PHENGUARD SUBSEA 780
- Excellent resistance to high temperature cathodic protection
- Meets the requirements of Norsok M-501 rev. 6, system 7C (180°C / 356°F)
- Excellent resistance to seawater immersion
- Very good corrosion control
- Good application properties

## COLOR AND GLOSS LEVEL

- Reddish 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<br>max. 315.0 g/l (approx. 2.6 lb/US gal) |
| **Recommended dry film thickness** | 175 µm (7.0 mils) |
| **Theoretical spreading rate** | 3.8 $m^2$/l for 175 µm (151 $ft^2$/US gal for 7.0 mils) |
| **Dry to handle** | 8 hours |
| **Overcoating Interval** | Minimum: 3 hours<br>Maximum: 21 days |
| **Full cure after** | See curing table |
| **Shelf life** | Base: at least 24 months when stored cool and dry<br>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
- See ADDITIONAL DATA – Spreading rate and film thickness

# PHENGUARD™ SUBSEA 610

## RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

**Substrate conditions**

- Steel should be blast cleaned in situ to at least ISO-Sa2½
- Blasting profile 50 – 100 µm (2.0 – 4.0 mils)
- Steel must be free from rust, scale, shop primer and any other contamination

**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

## 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**

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 |
| 30°C (86°F) | 10 minutes |

**Pot life**

4 hours at 20°C (68°F)

**Air spray**

**Recommended thinner**

THINNER 91-92

**Volume of thinner**

2 - 15%, 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.)

# PHENGUARD™ SUBSEA 610

**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 - 20.0 MPa (approx. 150 - 200 bar; 2176 - 2901 p.s.i.)

**Brush/roller**

- Brush: for stripe coating and spot repair only

**Recommended thinner**
THINNER 91-92

**Volume of thinner**
2 – 10%

**Cleaning solvent**
THINNER 90-53

## ADDITIONAL DATA

| Spreading rate and film thickness | |
|---|---|
| **DFT** | **Theoretical spreading rate** |
| 175 µm (7.0 mils) | 3.8 $m^2$/l (151 $ft^2$/US gal) |

Note: Maximum DFT when brushing: 80 µm (3.1 mils)

| 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 and PHENGUARD SUBSEA 780 | Minimum | 16 hours | 6 hours | 3 hours | 3 hours | 2 hours |
| | Maximum | 28 days | 25 days | 21 days | 14 days | 7 days |

Note: Surface should be dry and free from any contamination

# PHENGUARD™ SUBSEA 610

| 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 |

Notes:
- Adequate ventilation must be maintained during application and curing
- The coating should be allowed to cure for 24 hours at the same temperature, with sufficient ventilation, before it is exposed to lower temperatures

| 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 |

# PHENGUARD™ SUBSEA 610

## 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 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 information (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 sheet supersedes all previous versions and it is the Buyer's responsibility to ensure that this information is current prior to using the product. Current sheets for all PPG Protective & Marine Coatings Products are maintained at www.ppgpmc.com. The English text of this sheet shall prevail over any translation thereof.