

NOVAGUARD™ 650

DESCRIPTION

Two-component, solvent-free amine cured epoxy coating

PRINCIPAL CHARACTERISTICS

- Tank coating for crude oil and aliphatic petroleum products
- Rapid cure and return-to-service
- Good resistance to various chemicals
- Can be applied by heavy-duty, single-feed, airless spray equipment (60:1)
- Excellent anticorrosive properties and water resistance
- Good abrasion resistance
- A clear (semi-transparent) version is available for systems reinforced with chopped glass fibers or glass fiber mats
- Meets the requirements of EI 1541 2.2 (coating systems for aviation fuel storage tanks and pipes)

COLOR AND GLOSS LEVEL

- Gray, offwhite, clear (semi-transparent)
- Gloss

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.4 kg/l (11.7 lb/US gal)
Volume solids	100%
VOC (Supplied)	UK PG 6/23(92) Appendix 3: max. 20.0 g/l (approx. 0.2 lb/US gal)
Recommended dry film thickness	300 - 600 µm (12.0 - 24.0 mils) depending on system
Theoretical spreading rate	3.3 m ² /l for 300 µm (134 ft ² /US gal for 12.0 mils) 1.7 m ² /l for 600 µm (67 ft ² /US gal for 24.0 mils)
Dry to touch	8 hours
Overcoating Interval	Minimum: 12 hours Maximum: 6 months
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 - Overcoating intervals
- See ADDITIONAL DATA - Curing time

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Substrate conditions

- Steel; blast cleaned to ISO-Sa2½, blasting profile 50 - 100 µm (2.0 - 4.0 mils)



NOVAGUARD™ 650

Substrate temperature and application conditions

- Substrate temperature during application and curing should be above 5°C (41°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 80:20 (4:1)

- The temperature of the mixed base and hardener should preferably be above 20°C (68°F)
 - No thinner should be added
-

Pot life

45 minutes at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life

Airless spray

- Use heavy-duty, single-feed, airless spray equipment, preferably 60:1 pump ratio and suitable high-pressure hoses/in-line heating or insulated hoses may be necessary to avoid cooling down of paint in hoses at low air temperature

Recommended thinner

No thinner should be added

Nozzle orifice

Approx. 0.43 – 0.53 mm (0.017 – 0.021 in)

Nozzle pressure

21.0 MPa (approx. 210 bar; 3046 p.s.i.)

Brush/roller

- Brush: for stripe coating and spot repair only

Recommended thinner

No thinner should be added

Cleaning solvent

THINNER 90-53 or THINNER 90-83

Note: All application equipment must be cleaned immediately after use. Paint inside the spraying equipment must be removed before the pot life has been expired.

NOVAGUARD™ 650

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	Theoretical spreading rate
300 µm (12.0 mils)	3.3 m ² /l (131 ft ² /US gal)
600 µm (24.0 mils)	1.7 m ² /l (67 ft ² /US gal)

Overcoating interval for DFT up to 600 µm (24.0 mils)						
Overcoating with...	Interval	5°C (41°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
itself	Minimum	36 hours	20 hours	12 hours	5 hours	2 hours
	Maximum	6 months	6 months	6 months	4 months	2 months

Note: Surface must be dry and free from any contamination

Curing time for DFT up to 600 µm (24.0 mils)	
Substrate temperature	Service- water immersion
5°C (41°F)	3 days
10°C (50°F)	45 hours
20°C (68°F)	18 hours
30°C (86°F)	6 hours

Note: Time to Service- water immersion allows for tank test with fresh, brackish or sea water. Chemical solutions in water (acids, bases or fertilizer for instance) require full cure

Curing time for DFT up to 600 µm (24.0 mils)		
Substrate temperature	Dry to walk on	Resistant to vehicular service
5°C (41°F)	58 hours	N/A
10°C (50°F)	36 hours	N/A
20°C (68°F)	14 hours	N/A
30°C (86°F)	5 hours	N/A

Note: At the dry to walk on time care is still required to not exert local peak or static pressure. A slight recoverable imprint may be visible but this does not affect the coating performance. Dry to walk on time allows for coating inspection including holiday testing.

NOVAGUARD™ 650

Curing time for DFT up to 600 µm (24.0 mils)			
Substrate temperature	Dry to handle	Minimum cure time for purely aliphatic petroleum product (see note)	Minimum cure time for all other chemicals
5°C (41°F)	36 hours	4 days	15 days
10°C (50°F)	24 hours	60 hours	10 days
20°C (68°F)	12 hours	30 hours	5 days
30°C (86°F)	4 hours	10 hours	60 hours

Note: At the cure time for purely aliphatic petroleum products, crude oil, clean petroleum products / fuels and bio-diesel can be loaded. Gasoline/alcohol blends are not included in purely aliphatic petroleum products. Please contact your PPG representative for further details

Pot life (at application viscosity)	
Mixed product temperature	Pot life
20°C (68°F)	45 minutes
30°C (86°F)	20 minutes

Note: Due to exothermic reaction, temperature during and after mixing may increase

SAFETY PRECAUTIONS

- Although this is a solvent-free paint, care should be taken to avoid inhalation of spray mist, as well as contact between the wet paint and exposed skin or eyes
- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets

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

- EXPLANATION TO PRODUCT DATA SHEETS INFORMATION SHEET 1411

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.

NOVAGUARD™ 650

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.

The PPG logo, and all other PPG marks are property of the PPG group of companies. All other third-party marks are property of their respective owners.

