

# SIGMASHIELD™ 420

## DESCRIPTION

Two-component, reinforced high solids polyamine adduct cured epoxy coating

## PRINCIPAL CHARACTERISTICS

- Coating for cargo tanks of bulk- or oil carriers and storage tanks
- Buildcoat for underwater and boottop systems
- Excellent abrasion and impact resistance
- Outstanding (sea)water resistance
- Easy to clean

## COLOR AND GLOSS LEVEL

- Gray, redbrown (other colors available on request)
- Gloss

## BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.6 kg/l (13.4 lb/US gal)
Volume solids	81 ± 2%
VOC (Supplied)	Directive 1999/13/EC, SED: max. 153.0 g/kg UK PG 6/23(92) Appendix 3: max. 239.0 g/l (approx. 2.0 lb/US gal)
Recommended dry film thickness	125 - 200 µm (5.0 - 8.0 mils) depending on system
Theoretical spreading rate	5.4 m <sup>2</sup> /l for 150 µm (217 ft <sup>2</sup> /US gal for 6.0 mils) 4.1 m <sup>2</sup> /l for 200 µm (162 ft <sup>2</sup> /US gal for 8.0 mils)
Dry to touch	3 hours
Overcoating Interval	Minimum: 3.5 hours Maximum: 14 days
Full cure after	5 days
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

## RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

### Substrate conditions

- Previous coat must be dry and free from any contamination



# SIGMASHIELD™ 420

## **Substrate temperature and application conditions**

- Substrate temperature during application and curing should be at least 3°C (5°F) above dew point
  - Substrate temperature during application and curing down to 5°C (41°F) is acceptable
- 

## **INSTRUCTIONS FOR USE**

### **Mixing ratio by volume: base to hardener 75:25 (3:1)**

- 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**

None

---

### **Pot life**

1.5 hours

Note: See ADDITIONAL DATA – Pot life

---

### **Air spray**

#### **Recommended thinner**

THINNER 91-92

#### **Volume of thinner**

5 - 10%, depending on required thickness and application conditions

#### **Nozzle orifice**

1.7 - 2.0 mm (approx. 0.070 - 0.079 in)

#### **Nozzle pressure**

0.3 - 0.4 MPa (approx. 3 - 4 bar; 44 - 58 p.s.i.)

---

# SIGMASHIELD™ 420

## Airless spray

### **Recommended thinner**

THINNER 91-92

### **Volume of thinner**

0 - 10% for a DFT of 100 µm (4.0 mils); 0 - 5% for a DFT of 200 µm (8.0 mils)

### **Nozzle orifice**

Approx. 0.53 - 0.69 mm (0.021 - 0.027 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

---

## **ADDITIONAL DATA**

<b>Spreading rate and film thickness</b>	
<b>DFT</b>	<b>Theoretical spreading rate</b>
100 µm (4.0 mils)	8.1 m <sup>2</sup> /l (325 ft <sup>2</sup> /US gal)
150 µm (6.0 mils)	5.4 m <sup>2</sup> /l (217 ft <sup>2</sup> /US gal)
175 µm (7.0 mils)	4.6 m <sup>2</sup> /l (186 ft <sup>2</sup> /US gal)
200 µm (8.0 mils)	4.1 m <sup>2</sup> /l (162 ft <sup>2</sup> /US gal)

Note: Maximum DFT when brushing: 75 µm (3.0 mils)

---

# SIGMASHIELD™ 420

Overcoating interval for DFT up to 150 µm (6.0 mils)						
Overcoating with...	Interval	5°C (41°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
epoxy coatings	Minimum	14 hours	7 hours	3.5 hours	2 hours	1.5 hours
	Maximum	28 days	28 days	14 days	7 days	4 days
polyurethanes	Minimum	22 hours	14 hours	10 hours	6 hours	4 hours
	Maximum	28 days	28 days	14 days	7 days	4 days

Note: Surface should be dry and free from any contamination

Curing time for DFT up to 150 µm (6.0 mils)			
Substrate temperature	Dry to handle	Service- water immersion	Full cure
5°C (41°F)	15 hours	10 days	17 days
10°C (50°F)	8 hours	7 days	14 days
20°C (68°F)	3.5 hours	5 days	7 days
30°C (86°F)	2 hours	4 days	5 days
40°C (104°F)	1.5 hours	3 days	3 days

#### Notes:

- For cargo hold application: for full cure for hard angular cargoes, please contact your nearest PPG Protective & Marine Coatings sales office
- Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)
- Should SIGMASHIELD 420 or the total coating system (2 x 125 µm/2 x 5.0 mils) be applied in excess of the specified dry film thickness, then the time necessary to reach full cure will be increased

Pot life (at application viscosity)	
Mixed product temperature	Pot life
10°C (50°F)	3 hours
20°C (68°F)	1.5 hours
30°C (86°F)	45 minutes

## 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.



# SIGMASHIELD™ 420

## 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
• RELATIVE HUMIDITY – SUBSTRATE TEMPERATURE – AIR TEMPERATURE	INFORMATION SHEET	1650

## 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](http://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.

