

# SIGMALINE™ 523

## DESCRIPTION

Two-component, solvent-free, polyamine-adduct cured, epoxy coating

## PRINCIPAL CHARACTERISTICS

- Solvent-free coating for the protection of pipes against the effects of potable water
- Resistant against bacterial attack
- Fast-curing, especially when applied to preheated substrates
- Can be applied to rotating pipes at a dry film thickness (DFT) up to 600 µm (24.0 mils) at a substrate temperature of 50°C (122°F) and up to 900 µm (36.0 mils) at a substrate temperature of 10°C (50°F), by twin-feed, hot, airless spray equipment
- WRAS approved according to BS6920, for use with potable water up to 23°C (yellow) and 60°C (red-brown)

## COLOR AND GLOSS LEVEL

- Yellow, redbrown
- Gloss

## BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.5 kg/l (12.5 lb/US gal)
Volume solids	100%
VOC (Supplied)	Directive 1999/13/EC, SED: max. 29.0 g/kg max. 42.0 g/l (approx. 0.4 lb/US gal)
Recommended dry film thickness	300 - 600 µm (12.0 - 24.0 mils) per coat
Theoretical spreading rate	1.7 m <sup>2</sup> /l for 600 µm (67 ft <sup>2</sup> /US gal for 24.0 mils) 3.3 m <sup>2</sup> /l for 300 µm (134 ft <sup>2</sup> /US gal for 12.0 mils)
Dry to touch	3 hours
Overcoating Interval	Minimum: Not applicable
Full cure after	60 hours
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 - Curing time
- Overcoating: wet-in-wet (within 30 minutes). After that, for good inter-coat adhesion, areas that need repair or complete overcoating to build thickness, should be roughened by abrading (small areas) or sweep-blasting

# SIGMALINE™ 523

## RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

### Substrate conditions

- Steel; blast cleaned to ISO-Sa2½, blasting profile 50 – 100 µm (2.0 – 4.0 mils)
  - An even pipe temperature ensures an even curing and appearance (flow and gloss)
- 

### Substrate temperature

- 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
  - Substrate temperature during automatic application between 35°C (95°F) and 50°C (122°F) is recommended, which will ensure good curing and appearance
- 

## INSTRUCTIONS FOR USE

### Mixing ratio by volume: base to hardener 66.7:33.3 (2:1)

- No thinner should be added
  - Application with twin-feed hot airless spray equipment
- 

### Induction time

None

---

### Pot life

4 minutes at 60°C (140°F)

Note: See ADDITIONAL DATA – Pot life

---

### Application

- Because SIGMALINE 523 will be applied in a one coat operation it is necessary to check the specified DFT by measuring the wet film thickness (WFT)
  - Weld seams may need a thicker coat to obtain the specified DFT alongside the welds
  - For good inter-coat adhesion, areas that need repair or complete overcoating to build thickness, should be roughened by abrading (small areas) or sweep-blasting
  - Smoothest film can be achieved at higher substrate temperatures
-

# SIGMALINE™ 523

## **Airless spray**

- Twin-feed, hot airless spray
- Pumping viscosity is achieved at 40°C (104°F) to 60°C (140°F)
- Temperature in the mixing unit must be between 55°C (131°F) and 65°C (149°F)

## **Recommended thinner**

No thinner should be added

## **Nozzle orifice**

Approx. 0.58 – 0.79 mm (0.023 in – 0.031 in)

## **Nozzle pressure**

15.0 MPa (approx. 150 bar; 2176 p.s.i.)

---

## **Brush/roller**

- Only for touch-up and spot repair

## **Recommended thinner**

No thinner should be added

### Notes:

- Pot life at 20°C (68°F) is approx. 30 min.
- Substrate temperature should be above 15°C (59°F)

---

## **Cleaning solvent**

THINNER 90-53 or THINNER 90-83

---

## **Cleaning procedures**

- Parts of the spraying equipment containing mixed base and hardener must be cleaned immediately after completion of the job or during any interruption
- Mixed material will become insoluble within a few minutes after mixing at 60°C (140°F)

---

## **ADDITIONAL DATA**

<b>Spreading rate and film thickness</b>	
<b>DFT</b>	<b>Theoretical spreading rate</b>
300 µm (12.0 mils)	3.3 m <sup>2</sup> /l (134 ft <sup>2</sup> /US gal)
500 µm (20.0 mils)	2.0 m <sup>2</sup> /l (80 ft <sup>2</sup> /US gal)
600 µm (24.0 mils)	1.7 m <sup>2</sup> /l (67 ft <sup>2</sup> /US gal)

Note: Maximum DFT when brushing: 250 µm (10.0 mils)

---

# SIGMALINE™ 523

## Curing time for DFT up to 600 µm (24.0 mils)

Substrate temperature	Dry to touch	Dry to handle	Full cure
10°C (50°F)	8 hours	12 hours	7 days
20°C (68°F)	3 hours	5 hours	60 hours
30°C (86°F)	1 hour	3 hours	24 hours
40°C (104°F)	45 minutes	1.5 hours	12 hours
50°C (122°F)	30 minutes	1 hour	6 hours

### Notes:

- Curing temperature below 10°C (50°F) is not recommended
- Adequate ventilation must be maintained during application and curing
- Lower temperatures and poor ventilation will result in extended cure time. Insufficient ventilation and high relative humidity levels during cure may cause the lining to blush, which must be removed by water washing prior to service or touch up

## Pot life (at application viscosity)

Mixed product temperature	Pot life
20°C (68°F)	30 minutes
50°C (122°F)	8 minutes
60°C (140°F)	4 minutes
70°C (158°F)	2 minutes

Note: For a repair set of 1 liter (0.264 US gallon) and for small quantities in hose and mixing chamber

## SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets
- 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
- No solvent present; however, spray mist is not harmless, a fresh air mask should be used during spraying
- Ventilation should be provided in confined spaces to maintain good visibility
- Protective clothing and spray masks should be provided to avoid any dermatitic or toxic hazard

## 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.



# SIGMALINE™ 523

## 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
• 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

## 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.

