



New Guard Coatings Group

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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 ² /l for 600 µm (67 ft ² /US gal for 24.0 mils) 3.3 m ² /l for 300 µm (134 ft ² /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

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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)
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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
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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
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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
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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

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

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

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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.



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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
• 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

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