SIGMALINE 2000

4 pages

April 2010
Revision of April 2009

DESCRIPTION

two component solvent free amine cured phenolic epoxy coating

PRINCIPAL CHARACTERISTICS

- one coat system direct to metal for pipe externals
- suitable for e.g. bell holing jobs
- resistant to well designed cathodic protection
- glossy and smooth appearance
- can be applied by heavy duty twin feed hot airless spray equipment
- can be applied at a substrate temperature of 90°C
- reduced explosion risk and fire hazard
- approved to Saudi Aramco APCS 113A

COLOURS AND GLOSS

redbrown - gloss

BASIC DATA AT 20°C

(1 g/cm³ = 8.25 lb/US gal; 1 m²/l = 40.7 ft²/US gal)
(data for mixed product)

Mass density	1.4 g/cm³
Volume solids	100%
VOC (supplied)	max. 108 g/kg (Directive 1999/13/EC, SED) max. 146 g/l (approx. 1.2 lb/gal) see information sheet 1411
Recommended dry film thickness	600 - 1500 µm depending on system
Theoretical spreading rate	1.7 m²/l for 600 µm *
Touch dry after	6 hours
Overcoating interval	min. 24 hours * max. 2 months *
Full cure after	5 days *

(data for components)

Shelf life (cool and dry place)	at least 12 months * see additional data

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- steel; blast cleaned to a minimum of ISO-Sa2½, blasting profile 50 - 100 µm
- substrate temperature should be above 5°C and at least 3°C above dew point during application and curing

INSTRUCTIONS FOR USE

mixing ratio by volume: base to hardener 80 : 20

- when mixing the temperature of the base and hardener should be at least 20°C
- at lower temperature the viscosity will be too high for spray application
- no thinner should be added

Induction time	none
Pot life	1 hour at 20°C * * see additional data

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AIRLESS SPRAY

- heavy duty single feed airless spray equipment with a minimum of 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
- length of hoses should be as short as possible

Recommended thinner: no thinner should be added
Nozzle orifice: approx. 0.53 mm (= 0.021 in)
Nozzle pressure: at 20°C (paint temperature) min. 28 MPa (= approx. 280 bar; 4000 p.s.i.)
at 30°C (paint temperature) min. 22 MPa (= approx. 220 bar; 3000 p.s.i.)

BRUSH/ROLLER

for stripe coating and spot repair only
Recommended thinner: no thinner should be added

CLEANING SOLVENT

Thinner 90-83 (preferred) or Thinner 90-53

- all application equipment must be cleaned immediately after use
- paint inside the spraying equipment must be removed before the pot life time has been expired

SAFETY PRECAUTIONS

for paint and recommended thinners see safety 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

- ventilation should be provided in confined spaces to maintain good visibility

ADDITIONAL DATA

Film thickness and spreading rate

theoretical spreading rate m²/l	1.7	1.0	0.7
dft in µm	600	1000	1500

max. dft when brushing: 150 µm

measuring wet film thickness

- a deviation is often obtained between the measured apparent wft and the real applied wft
- this is due to the thixotropy and the surface tension of the paint which retards the release of air trapped in the paint film for some time
- recommendation is to apply a wft which is equal to the specified dft plus 60 µm

measuring dry film thickness

- because of low initial hardness the dft cannot be measured for some days (depending on ambient temperature) after application due to the penetration of the measuring device into the paint film
- the dft should be measured using a calibration foil of known thickness placed in between the coating and the measuring device

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Overcoating table for SigmaLine 2000 for dft up to 600 µm (for spot repair and stripe coating only)

substrate temperature	5°C	10°C	20°C	30°C
minimum interval	80 hours	36 hours	24 hours	12 hours
maximum interval	3 months	3 months	2 months	1 month

– surface should be dry and free from any contamination

Curing table for dft up to 600 µm

substrate temperature	dry to handle	full cure
5°C	60 hours	15 days
10°C	30 hours	7 days
20°C	16 hours	5 days
30°C	10 hours	3 days

– although the paint is solvent free adequate ventilation must be maintained during application and curing (please refer to sheet 1433 and 1434)

Pot life (at application viscosity)

20°C	60 min.
30°C	45 min.
40°C	20 min. *

* it is recommended to use plural airless equipment due to the short pot life

– due to exothermic reaction, temperature during and after mixing may increase

Worldwide availability

Whilst it is always the aim of PPG Protective & Marine Coatings to supply the same product on a worldwide basis, 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	see information sheet 1411
Safety indications	see information sheet 1430
Safety in confined spaces and health safety	
Explosion hazard - toxic hazard	see information sheet 1431
Safe working in confined spaces	see information sheet 1433
Directives for ventilation practice	see information sheet 1434

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LIMITATION OF LIABILITY

The information in this data sheet is based upon laboratory tests we believe to be accurate and is intended for guidance only. All recommendations or suggestions relating to the use of the Sigma Coatings products made by PPG Protective & Marine Coatings, whether in technical documentation, or in response to a specific enquiry, or otherwise, are based on data which to the best of our knowledge are reliable. The products and information are designed for users having the requisite knowledge and industrial skills and it is the end-user's responsibility to determine the suitability of the product for its intended use.

PPG Protective & Marine Coatings has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. PPG Protective & Marine Coatings does therefore not accept any liability arising from loss, injury or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise).

The data contained herein are liable to modification as a result of practical experience and continuous product development.
This data sheet replaces and annuls all previous issues and it is therefore the user's responsibility to ensure that this sheet is current prior to using the product.

The English text of this document shall prevail over any translation thereof.

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