

SIGMAGUARD 603

5 pages

July 2007
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DESCRIPTION

two component solvent free amine cured epoxy coating

PRINCIPAL CHARACTERISTICS

- one coat protection for maintenance or major refurbishment of ballast water tanks and crude oil tanks
- tolerant to marginal surface preparation
- good corrosion resistance
- can be applied by heavy duty single feed airless spray equipment (60:1)
- reduced explosion risk and fire hazard
- good visibility due to light colour

COLOURS AND GLOSS

light grey - 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

1.3 g/cm³

Volume solids

100%

VOC (supplied)

max. 111 g/kg (Directive 1999/13/EC, SED)

max. 144 g/l (approx. 1.2 lb/gal)

see information sheet 1411

Recommended dry film
thickness

300 µm

Theoretical spreading rate

3.3 m²/l for 300 µm *

Touch dry after

8 hours

Overcoating interval

min. 24 hours *

max. 20 days *

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 ISO-Sa2½, blasting profile (R_z) 50 - 100 µm
- steel; blast cleaned to ISO-Sa2 or power tool cleaned to ISO-St2 for good corrosion protection
- coated steel; hydrojetted to VIS WJ2/3 L (blasting profile; (R_z) 50 - 100 µm)
- previous epoxy coat; in sound condition, dry and free from any contamination and sufficiently roughened if necessary
- pitted steel; blast cleaned to ISO-Sa2½ is recommended
- suitable primer; SigmaCover 280
- substrate temperature must be above 5°C and at least 3°C above dew point during application and curing

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SYSTEM SPECIFICATION	marine	1 x 300 µm SigmaGuard 603
INSTRUCTIONS FOR USE	mixing ratio by volume: base to hardener 80 : 20 <ul style="list-style-type: none"> – the temperature of the mixed base and hardener should preferably 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	approx. 1 hour at 20°C * * see additional data	
AIRLESS SPRAY	<ul style="list-style-type: none"> – 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 – application with 45:1 airless spray equipment is possible provided in-line heated high pressure hoses are used – in case of using 45:1 airless spray equipment the paint must be heated to approx. 30°C in order to obtain the right application viscosity – length of hoses should be as short as possible 	
Recommended thinner	no thinner should be added	
Nozzle orifice	approx. 0.53 - 0.64 mm (= 0.021 - 0.025 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	Sigma thinner 90-83 (preferred) or Sigma thinner 90-53 <ul style="list-style-type: none"> – all equipment used for application must be cleaned immediately after use – paint inside the spraying equipment must be removed before the pot life time has been expired 	

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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

- 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

ADDITIONAL DATA

Film thickness and spreading rate

theoretical spreading rate m ² /l	3.3	2.5
dft in µm	300	400

max. dft when brushing: 150 - 200 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 within some days due to the penetration of the measuring device into the soft paint film
- the dft should be measured using a calibration foil of known thickness placed in between the coating and the measuring device

Overcoating with SigmaGuard 603 (spot repair and stripe coating)

substrate temperature	5°C	10°C	20°C	30°C
minimum interval	80 hours	36 hours	24 hours	16 hours
maximum interval	20 days	20 days	20 days	14 days

- surface should be dry and free from any contamination

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Curing table for dft up to 150 µm

substrate temperature	dry to handle	minimum curing time before exposure to seawater	full cure
5°C	60 hours	10 days	15 days
10°C	30 hours	5 days	7 days
20°C	16 hours	4 days	5 days
30°C	10 hours	2 days	3 days

- 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.

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

Worldwide availability

Whilst it is always the aim of SigmaKalon Marine & Protective 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
Cleaning of steel and removal of rust	see information sheet 1490
Specification for mineral abrasives	see information sheet 1491

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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 SigmaKalon Marine & Protective 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.

SigmaKalon Marine & Protective 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. SigmaKalon Marine & Protective 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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