SIGMA PHENGUARD 965

(SIGMA TANKCOAT)

5 pages

March 2007
Revision of August 2006

DESCRIPTION

two component high build amine adduct cured phenolic epoxy coating

PRINCIPAL CHARACTERISTICS

- Sigma Phenguard 965 system
- excellent resistance to a wide range of organic acids, alcohols, fats (regardless of free fatty acid content) and solvents
- maximum cargo flexibility
- low cargo absorption
- easy to clean
- good resistance to hot water
- can be applied and cures at temperatures down to 41°F (+5°C)
- good application properties, resulting in a smooth surface

COLORS AND GLOSS

off-white, pink, grey - eggshell

BASIC DATA AT 68°F

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

Mass density	14.19 lbs/gal (1.7 g/cm³)
Solids content	68 ± 2%
VOC (supplied - EPA 24)	max. 195 g/kg (Directive 1999/13/EC, SED) max. 2.7 lb/gal (approx. 329 g/l)
Recommended dry film thickness	4 mils (100 µm) *
Theoretical spreading rate	276 ft²/gal (6.8 m²/l) for 4 mils (100 µm) *
Touch dry after	2 - 3 hours at 68°F (20°C), 14 - 16 hours at 40°F (5°C)
Overcoating interval	min. 8 hours * max. 14 days *
Full cure after	see curing table *
	(data for components)
Shelf life (cool and dry place)	at least 12 months

* see additional data

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- steel; blast cleaned in-situ to at least SSPC SP10/NACE 2 (ISO-Sa2½) and free from rust, scale, shop primer and any other contamination
- blasting profile; (R_z) 2 - 4 mils (50 - 100 µm)
- the substrate must be perfectly dry before and during application of Sigma Phenguard 965
- substrate temperature must be above 41°F (5°C) and at least 5°F (3°C) above dew point during application and curing

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SYSTEM SPECIFICATION	Sigma Phenguard 965 off-white	4 mils (100 µm)
	Sigma Phenguard 965 pink	4 mils (100 µm)
	Sigma Phenguard 965 grey	4 mils (100 µm)

INSTRUCTIONS FOR USE

mixing ratio by volume: base to hardener 87 : 13

- the temperature of the mixed base and hardener should preferably be above 59°F (15°C), otherwise extra solvent may be required to obtain application viscosity
- too much solvent results in reduced sag resistance
- thinner should be added after mixing the components

Induction time

allow induction time before use
41°F (5°C) - 20 min.
50°F (10°C) - 15 min.
59°F (15°C) - 10 min.

Pot life

2 hours at 68°F (20°C) *
* see additional data

AIRLESS SPRAY

Recommended thinner	Sigma thinner 91-92
Volume of thinner	5 - 10%, depending on required thickness and application conditions
Nozzle orifice	approx. 0.018" - 0.021" inch (= 0.46 - 0.53 mm)
Nozzle pressure	2130 p.s.i. (= approx. 15 MPa; 150 bar)

CONVENTIONAL SPRAY

Recommended thinner	Sigma thinner 91-92
Volume of thinner	5 - 10%, depending on required thickness and application conditions
Nozzle orifice	0.078" inch (2 mm)
Nozzle pressure	43 p.s.i. (= approx. 0.3 MPa or 3 bar)

BRUSH

only for spot repair and stripe coating

Recommended thinner	Sigma thinner 91-92
Volume of thinner	0 - 5%

CLEANING SOLVENT

Sigma thinner 90-53

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SAFETY PRECAUTIONS

for paint and recommended thinners see safety sheets 1430, 1431 and relevant material safety data sheets

this is a solvent based 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

ADDITIONAL DATA

Film thickness and spreading rate

theoretical spreading rate ft²/gal (m²/l)	276 (6.8)	220 (5.4)
dft in mil (µm)	4 (100)	5 (125)

max. dft when brushing: 2 mils (50 µm)

Overcoating table for Sigma Phenguard 965

substrate temperature	41°F (5°C)	50°F (10°C)	59°F (15°C)	68°F (20°C)	86°F (30°C)
minimum interval	24 hours	20 hours	14 hours	8 hours	6 hours
maximum interval	28 days	25 days	21 days	14 days	7 days

– surface should be dry and free from any contamination

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Curing table

substrate temperature	min. curing time of Sigma Phenguard 965 system before transport of cargoes without note 4, 7, 8 or 11 and ballast water and tank test with seawater
41°F (5°C)	7 days
50°F (10°C)	5 days
59°F (15°C)	4 days
68°F (20°C)	3 days
86°F (30°C)	2 days

- minimum curing time of Sigma Phenguard 965 system before transport of cargoes with note 4, 7, 8 or 11: 3 months
- for detailed information on resistance and resistance notes, please refer to the latest issue of the Cargo Resistance List
- for transport of methanol and vinyl acetate monomer, a hot cargo cure is required which cannot be substituted by a service period of 3 months with non-aggressive cargoes
- adequate ventilation must be maintained during application and curing (please refer to sheet 1433 and 1434)
- when used as a primer under solvent free tank-linings the dft must be limited to a maximum of 4 mils (100 µm)

Pot life (at application viscosity)

41°F (5°C)	8 hours
50°F (10°C)	6 hours
59°F (15°C)	4 hours
68°F (20°C)	2 hours
86°F (30°C)	1 hour

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.

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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

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 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 therefore does 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 continous 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.

In the event of any disparity or dispute in the wording of this document, the original English text shall prevail.

	PDS	7959
199289	off-white	7001002200
199282	pink	6007002200
199284	grey	5000002200