

SIGMASHIELD 420**(SIGMA MULTIGUARD)**

4 pages

September 2005
Revision of July 2005**DESCRIPTION**

two component reinforced high solids amine cured epoxy coating

PRINCIPAL CHARACTERISTICS

- coating for cargo tanks of bulk- or oil carriers and storage tanks
- buildcoat for underwater- and boottop systems
- excellent abrasion and impact resistance
- excellent water resistance
- easy to clean
- good low temperature curing

COLOURS AND GLOSS

grey, redbrown (other colours on request) - 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

1.6 g/cm³

Volume solids

84 ± 2%

VOC (supplied)

max. 153 g/kg (Directive 1999/13/EC, SED)

max. 239 g/l (approx. 2.0 lb/gal)

Recommended dry film
thickness

150 - 200 µm depending on system

Theoretical spreading rate

5.6 m²/l for 150 µm, 4.2 m²/l for 200 µm *

Touch dry after

3 hours

Overcoating interval

min. 10 hours *

max. 14 days *

Full cure after

5 days *

(data for components)

Shelf life (cool and dry place)

at least 12 months

Flash point

base 27°C, hardener 29°C

* see additional data

**RECOMMENDED
SUBSTRATE CONDITIONS
AND TEMPERATURES**

- previous coat; (e.g. SigmaCover 280 or SigmaShield 220) dry and free from any contamination
- substrate temperature should be at least 5°C and at least 3°C above dew point during application and curing

SYSTEM SPECIFICATION

marine

system sheets 3101, 3102, 3103, 3107

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(SIGMA MULTIGUARD)

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INSTRUCTIONS FOR USE

mixing ratio by volume: base to hardener 75 : 25

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

Induction time

none

Pot life

1.5 hours at 20°C *

* see additional data

AIRLESS SPRAY

Recommended thinner

Sigma thinner 91-92

Volume of thinner

0 - 5% for 200 µm dft,
10% for 100 µm dft

Nozzle orifice

approx. 0.53 - 0.68 mm (= 0.021 - 0.027 in)

Nozzle pressure

15 MPa (= approx. 150 bar; 2130 p.s.i.)

AIR SPRAY

Recommended thinner

Sigma thinner 91-92

Volume of thinner

5 - 10%, depending on required thickness and application conditions

Nozzle orifice

1.7 - 2 mm

Nozzle pressure

0.3 - 0.4 MPa (= approx. 3 - 4 bar, 43 - 57 p.s.i.)

BRUSH/ROLLER

Recommended thinner

Sigma thinner 91-92

Volume of thinner

0 - 5%

CLEANING SOLVENT

Sigma thinner 90-53

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 vapour as well as contact between the wet paint and exposed skin or eyes

ADDITIONAL DATA***Film thickness and spreading rate***

theoretical	8.4	5.6	4.8	4.2
spreading rate m ² /l				
dft in µm	100	150	175	200

max. dft when brushing:

75 µm

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Overcoating table for SigmaShield 420 for dft up to 150 µm

with epoxy coatings

with polyurethanes

substrate temperature	5°C	10°C	20°C	30°C	40°C
minimum interval	14 hours	7 hours	3.5 hours	2 hours	1.5 hour
minimum interval	22 hours	14 hours	10 hours	6 hours	4 hours
maximum interval	28 days	28 days	14 days	7 days	4 days

- surface should be dry and free from chalking and contamination

Curing table for SigmaShield 420 for dft up to 150 µm

substrate temperature	dry to handle	full cure for immersion in seawater	full cure
5°C	15 hours	10 days	17 days
10°C	8 hours	7 days	14 days
20°C	3.5 hours	5 days	7 days
30°C	2 hours	4 days	5 days
40°C	1.5 hour	3 days	3 days

- for cargo hold application: for full cure for hard angular cargoes, please contact your nearest Sigma Coatings sales office
- adequate ventilation to remove solvent must be maintained during application and curing (please refer to sheet 1433 and 1434)
- should SigmaShield 420 or the total coating system (2 x 125 µm) be applied in excess of the specified dry film thickness, then the time necessary to reach full cure will be increased
- for advice please contact your nearest Sigma Coatings sales office

Pot life (at application viscosity)

10°C	3 hours
20°C	1.5 hour
30°C	45 min.

Worldwide availability

Whilst it is always the aim of Sigma 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

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 products made by Sigma 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.

Sigma 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. Sigma 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.

DS	7951
190960 grey	5177052200
192367 redbrown	6179052200