New Guard Coatings Group

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IPS Industrial Paint Supplies (Hull) Ltd. EMPSL Ace Coatings South ARCON

SIGMASHIELD™ 420 LT

DESCRIPTION

Two-component, reinforced high solids polyamine adduct cured epoxy coating

PRINCIPAL CHARACTERISTICS

- Coating for cargo tanks of bulk- or oil carriers and storage tanks
- Buildcoat for underwater and boottop systems
- Cures at temperatures down to -10°C (14°F)
- Excellent abrasion and impact resistance
- Outstanding (sea)water resistance
- Easy to clean

COLOR AND GLOSS LEVEL

- Gray, redbrown (other colors available on request)
- Gloss

BASIC DATA AT 10°C (50°F)

Data for mixed product	
Number of components	Two
Mass density	1.6 kg/l (13.4 lb/US gal)
Volume solids	81 ± 2%
VOC (Supplied)	Directive 1999/13/EC, SED: max. 123.0 g/kg max. 191.0 g/l (approx. 1.6 lb/US gal)
Recommended dry film thickness	125 - 200 µm (5.0 - 8.0 mils) depending on system
Theoretical spreading rate	5.4 m^2/l for 150 µm (217 ft^2/US gal for 6.0 mils) 4.1 m^2/l for 200 µm (162 ft^2/US gal for 8.0 mils)
Overcoating Interval	Minimum: 10 hours Maximum: 14 days
Full cure after	7 days
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 – Overcoating intervals
- See ADDITIONAL DATA – Curing time

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Substrate conditions

- Previous coat of approved coating must be dry and free from any contamination
- At freezing temperatures surface must be free from ice

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Substrate temperature and application conditions

- Substrate temperature during application and curing down to -10°C (14°F) is acceptable; however curing to hardness takes longer and complete resistance will be reached when the temperature increases
- Substrate temperature during application and curing should be at least 3°C (5°F) above dew point
- Relative humidity during application and curing should not exceed 85%

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 75:25 (3:1)

- The temperature of the mixed base and hardener should preferably be above 5°C (41°F), otherwise extra thinner may be required to obtain application viscosity
- Adding too much thinner results in reduced sag resistance and slower cure
- Thinner should be added after mixing the components

Induction time

None

Pot life

1 hour at 10°C (50°F)

Note: See ADDITIONAL DATA – Pot life

Air spray

Recommended thinner

THINNER 91-92

Volume of thinner

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

Nozzle orifice

1.7 – 2.0 mm (approx. 0.070 – 0.079 in)

Nozzle pressure

0.3 - 0.4 MPa (approx. 3 - 4 bar; 44 - 58 p.s.i.)

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Airless spray

Recommended thinner
THINNER 91-92

Volume of thinner
0 - 10% for a DFT of 100 µm (4.0 mils); 0 - 5% for a DFT of 200 µm (8.0 mils)

Nozzle orifice
Approx. 0.53 – 0.69 mm (0.021 – 0.027 in)

Nozzle pressure
15.0 MPa (approx. 150 bar; 2176 p.s.i.)

Brush/roller

Recommended thinner
THINNER 91-92

Volume of thinner
0 – 5%

Cleaning solvent
THINNER 90-53

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	**Theoretical spreading rate**
100 µm (4.0 mils)	8.1 m^2/l (325 ft^2/US gal)
150 µm (6.0 mils)	5.4 m^2/l (217 ft^2/US gal)
175 µm (7.0 mils)	4.6 m^2/l (186 ft^2/US gal)
200 µm (8.0 mils)	4.1 m^2/l (162 ft^2/US gal)

Note: Maximum DFT when brushing: 75 µm (3.0 mils)

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Overcoating interval for DFT up to 150 µm (6.0 mils)						
Overcoating with...	**Interval**	**-10°C (14°F)**	**0°C (32°F)**	**5°C (41°F)**	**10°C (50°F)**	**15°C (59°F)**
epoxy coatings	Minimum	48 hours	24 hours	10 hours	5 hours	4 hours
	Maximum	28 days	28 days	28 days	14 days	10 days
polyurethanes	Minimum	3 days	48 hours	36 hours	24 hours	16 hours
	Maximum	28 days	28 days	28 days	14 days	10 days

Note: Surface should be dry and free from chalking and contamination

Curing time for DFT up to 150 µm (6.0 mils)			
Substrate temperature	**Dry to handle**	**Service- water immersion**	**Full cure**
-10°C (14°F)	34 hours	18 days	N/A
0°C (32°F)	17 hours	10 days	28 days
5°C (41°F)	12 hours	7 days	14 days
10°C (50°F)	6 hours	5 days	7 days
15°C (59°F)	4 hours	4 days	5 days

Notes:

- For cargo hold application: for full cure for hard angular cargoes, please contact your nearest PPG Protective & Marine Coatings sales office
- Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)
- Should SIGMASHIELD 420 LT or the total coating system be applied in excess of the specified dry film thickness, then the time necessary to reach full cure will be increased

Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
5°C (41°F)	2 hours
10°C (50°F)	1 hour

SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets
- This is a solvent-borne 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

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.

SIGMASHIELD™ 420 LT

REFERENCES

• CONVERSION TABLES	INFORMATION SHEET	1410
• 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
• RELATIVE HUMIDITY – SUBSTRATE TEMPERATURE – AIR TEMPERATURE	INFORMATION SHEET	1650

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