

SIGMAZINC™ 109 HS

DESCRIPTION

Two-component, high solids polyamide adduct cured zinc rich epoxy primer

PRINCIPAL CHARACTERISTICS

- Designed as a system primer for various paint systems
- Excellent anticorrosive properties
- Quick-drying, can be overcoated after a short interval
- Can serve as a holding primer for various maintenance systems for a total repair
- Very good primer for systems with high solids epoxy buildcoats
- Complies with SSPC-Paint 20 level 2 and ISO 12944.5

COLOR AND GLOSS LEVEL

- Gray, reddish gray
- Flat

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	2.8 kg/l (23.4 lb/US gal)
Volume solids	66 ± 2%
VOC (Supplied)	Directive 1999/13/EC, SED: max. 106.0 g/kg max. 299.0 g/l (approx. 2.5 lb/US gal)
Recommended dry film thickness	60 - 150 µm (2.4 - 6.0 mils) depending on system
Theoretical spreading rate	11.0 m ² /l for 60 µm (441 ft ² /US gal for 2.4 mils)
Dry to touch	2.5 hours
Overcoating Interval	Minimum: 4 hours See overcoating tables
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



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RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Immersion exposure

- Steel; blast cleaned to ISO-Sa2½, blasting profile 40 – 70 µm (1.6 – 2.8 mils)
- Steel with approved zinc silicate shop primer; pretreated according to SPSS-Ss

Atmospheric exposure conditions

- Steel; blast cleaned to ISO-Sa2½, blasting profile 40 – 70 µm (1.6 – 2.8 mils)
- Steel with approved zinc silicate shop primer pretreated according to SPSS or power tool cleaned to SPSS-Pt3

Substrate temperature

- Substrate temperature during application and curing should be above 5°C (41°F)
- Substrate temperature during application and curing should be at least 3°C (5°F) above dew point

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 80:20 (4:1)

- The temperature of the mixed base and hardener should preferably be above 15°C (59°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

6 hours at 20°C (68°F)

Air spray

Recommended thinner

THINNER 91-92

Volume of thinner

0 - 15%, depending on required thickness and application conditions

Nozzle orifice

1.8 – 2.2 mm (approx. 0.070 – 0.087 in)

Nozzle pressure

0.3 - 0.6 MPa (approx. 3 - 6 bar; 44 - 87 p.s.i.)



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Airless spray**Recommended thinner**

THINNER 91-92

Volume of thinner

0 - 15%, depending on required thickness and application conditions

Nozzle orifice

Approx. 0.43 – 0.48 mm (0.017 – 0.019 in)

Nozzle pressure

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

Brush/roller**Recommended thinner**

THINNER 91-92

Volume of thinner

0 – 10%

Cleaning solvent

THINNER 90-53

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	Theoretical spreading rate
60 µm (2.4 mils)	11.0 m ² /l (441 ft ² /US gal)
75 µm (3.0 mils)	8.8 m ² /l (353 ft ² /US gal)
100 µm (4.0 mils)	6.6 m ² /l (265 ft ² /US gal)
150 µm (6.0 mils)	4.4 m ² /l (176 ft ² /US gal)

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Overcoating interval for DFT up to 100 µm (4.0 mils)					
Overcoating with...	Interval	10°C (50°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
subsequent coating	Minimum	8 hours	4 hours	3 hours	2 hours
	Maximum	3 months	3 months	3 months	3 months

Notes:

- Zinc rich primers can form zinc salts on the surface; preferably they should not be weathered for long periods before overcoating
- In clean exterior conditions, a maximum interval of 3 months can be tolerated, but in industrial or marine conditions this interval should be reduced to the practical minimum
- An interval of several months can be allowed under clean interior exposure conditions
- Before overcoating visible surface contamination must be removed by high-pressure water cleaning, sweep blasting or mechanical cleaning

Curing time for DFT up to 100 µm (4.0 mils)			
Substrate temperature	Dry to touch	Dry to handle	Full cure
10°C (50°F)	5 hours	6 hours	20 days
15°C (59°F)	3 hours	4 seconds	10 days
20°C (68°F)	2.5 seconds	3 hours	7 days
30°C (86°F)	1 hour	1.5 hours	5 days

Notes:

- SIGMAZINC 109 HS can be applied at temperatures between 5°C (41°F) and 10°C (50°F), but the curing rate will be very slow
- For such applications alternative zinc rich primers are recommended: SIGMAZINC 19, SIGMAZINC 158 and SIGMAZINC 160 for systems exposed to atmospheric conditions, SIGMAGUARD 750 for systems exposed to immersed conditions
- Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)

Pot life (at application viscosity)	
Mixed product temperature	Pot life
10°C (50°F)	12 hours
20°C (68°F)	6 hours
30°C (86°F)	4.5 hours
40°C (104°F)	3 hours

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

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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.

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
• CLEANING OF STEEL AND REMOVAL OF RUST	INFORMATION SHEET	1490
• SPECIFICATION FOR MINERAL ABRASIVES	INFORMATION SHEET	1491
• RELATIVE HUMIDITY – SUBSTRATE TEMPERATURE – AIR TEMPERATURE	INFORMATION SHEET	1650

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