

# SIGMA EP 111 PRIMER

## DESCRIPTION

Two-component, high solids polyamide cured recoatable zinc phosphate epoxy primer

## PRINCIPAL CHARACTERISTICS

- General-purpose epoxy primer or buildcoat in protective coating systems, for steel and concrete structures in atmospheric exposure
- Can be recoated with various two-component and conventional coatings, even after long weathering periods
- Free from lead- and chromate-containing pigments
- Excellent rust preventing properties in industrial or coastal atmospheres
- Tough with long term flexibility
- Cures at temperatures down to -5°C (23°F)
- Excellent adhesion to steel
- Easy application, both by airless spray and brush
- VOC compliant
- Registered as Highway Agency item 111
- Approved Network Rail RT 98

## COLOR AND GLOSS LEVEL

- Cream
- Eggshell

## BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.4 kg/l (11.7 lb/US gal)
Volume solids	68 ± 2%
VOC (Supplied)	UK PG 6/23(92) Appendix 3: max. 214.0 g/l (approx. 1.8 lb/US gal)
Recommended dry film thickness	75 - 150 µm (3.0 - 6.0 mils) depending on system
Theoretical spreading rate	6.8 m <sup>2</sup> /l for 100 µm (273 ft <sup>2</sup> /US gal for 4.0 mils)
Dry to touch	4 hours
Overcoating Interval	Minimum: 8 hours Maximum: 6 months
Full cure after	4 days
Shelf life	Base: at least 12 months when stored cool and dry Hardener: at least 12 months when stored cool and dry

## RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

### Substrate conditions

- Steel; blast cleaned to ISO-Sa2½

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## **Substrate temperature and application conditions**

- Substrate temperature during application and curing down to -5°C (23°F) is acceptable; provided the substrate is free from ice and dry
  - 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%
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## **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
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### **Pot life**

4 hours at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life

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### **Air spray**

#### **Recommended thinner**

THINNER 91-92

#### **Volume of thinner**

0 - 10%, depending on required thickness and application conditions

#### **Nozzle orifice**

1.5 – 3.0 mm (approx. 0.060 – 0.110 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 - 5%, depending on required thickness and application conditions

#### **Nozzle orifice**

Approx. 0.48 mm (0.019 in)

#### **Nozzle pressure**

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

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## **Brush/roller**

### **Recommended thinner**

THINNER 91-92

### **Volume of thinner**

0 – 5%

## **Cleaning solvent**

THINNER 90-53

## **ADDITIONAL DATA**

### **Spreading rate and film thickness**

<b>DFT</b>	<b>Theoretical spreading rate</b>
75 µm (3.0 mils)	9.1 m <sup>2</sup> /l (364 ft <sup>2</sup> /US gal)
100 µm (4.0 mils)	6.8 m <sup>2</sup> /l (273 ft <sup>2</sup> /US gal)
150 µm (6.0 mils)	4.5 m <sup>2</sup> /l (182 ft <sup>2</sup> /US gal)

### **Overcoating interval for DFT up to 100 µm (4.0 mils)**

<b>Overcoating with...</b>	<b>Interval</b>	<b>-5°C (23°F)</b>	<b>5°C (41°F)</b>	<b>10°C (50°F)</b>	<b>20°C (68°F)</b>	<b>30°C (86°F)</b>	<b>40°C (104°F)</b>
itself	Minimum	48 hours	20 hours	16 hours	8 hours	6 hours	4 hours
	Maximum	6 months	6 months	6 months	6 months	6 months	6 months

Note: For polyurethane paints the minimum overcoating time should be raised with 100%

### **Curing time for DFT up to 100 µm (4.0 mils)**

<b>Substrate temperature</b>	<b>Dry to handle</b>	<b>Full cure</b>
-5°C (23°F)	24 hours - 48 hours	14 days
0°C (32°F)	24 hours - 30 hours	10 days
5°C (41°F)	18 hours - 24 hours	8 days
10°C (50°F)	18 hours	6 days
15°C (59°F)	12 hours	5 days
20°C (68°F)	8 hours	4 days
30°C (86°F)	6 hours	3 days
40°C (104°F)	4 hours	48 hours

Note: Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)

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## 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.

## REFERENCES

• 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

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