February 25, 2021 (Revision of January 17, 2021)

SIGMAPRIME® 200 SERIES

DESCRIPTION

Universal epoxy anticorrosive primer, based upon pure epoxy technology

PRINCIPAL CHARACTERISTICS

- Universal epoxy primer system suitable for ballast tanks, deck, topside, superstructure, hull, cargo oil tanks and cargo holds
- Excellent anticorrosive properties and water resistance
- Surface tolerant primer
- Good chemical resistance
- Good abrasion resistance for dedicated areas of application
- Excellent adhesion to steel, shop primer, galvanized steel and non-ferrous metals
- Excellent recoatability
- Suitable for application and curing in a wide range of climatic conditions
- Suitable for bulk supply and twin feed application
- Suitable on wet blast cleaned substrates (damp or dry)

COLOR AND GLOSS LEVEL

- Alu light, alu yellow, gray, yellow/green, redbrown
- Eggshell

Note: Alu Light and Alu Yellow are available with SIGMAPRIME 200K version

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	SIGMAPRIME 200: 1.3 kg/l (10.8 lb/US gal) SIGMAPRIME 200 K: 1.4 kg/l (11.7 lb/US gal)
Volume solids	SIGMAPRIME 200: 57 ± 2% SIGMAPRIME 200 K: 60 ± 2%
VOC (Supplied)	Directive 1999/13/EC, SED: max. 326 g/kg (SIGMAPRIME 200) max. 430.0 g/l (approx. 3.6 lb/gal) (SIGMAPRIME 200) Directive 1999/13/EC, SED: max. 287 g/kg (SIGMAPRIME 200 K) max. 392.0 g/l (approx. 3.3 lb/gal) (SIGMAPRIME 200 K)
Recommended dry film thickness	See spreading rate tables
Theoretical spreading rate	SIGMAPRIME 200: 3.8 m^2/l for 150 µm (152 ft^2/US gal for 6.0 mils) SIGMAPRIME 200 K: 6.0 m^2/l for 100 µm (241 ft^2/US gal for 4.0 mils)
Dry to touch	1.5 hours
Overcoating Interval	See overcoating tables
Full cure after	7 days

SIGMAPRIME® 200 SERIES

Data for mixed product	
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

Immersion exposure

- Steel or steel with not approved zinc silicate shop primer; blast cleaned (dry or wet) to ISO-Sa2½, blasting profile 30 - 75 µm (1.2 – 3.0 mils)
- Steel with approved zinc silicate shop primer; weld seams and areas of damaged shop primer or breakdown should be blast cleaned to ISO-Sa2½, blasting profile 30 - 75 µm (1.2 – 3.0 mils) or power tool cleaned to SPSS-Pt3
- Coated steel; hydrojetted to VIS WJ2L (blasting profile 30 – 75 µm (1.2 – 3.0 mils))
- Primed steel or previous coat must be dry and free from any contamination

IMO-MSC.215(82) Requirements for Water Ballast Tanks and IMO-MSC.288(87) for Cargo tanks of Crude Oil Tankers (specified areas only)

- Steel; ISO 8501-3:2006 grade P2, with all edges treated to a rounded radius of minimum 2 mm (0.079 in) or subject to three pass grinding or at least equivalent process before painting
- Steel or steel with not approved zinc silicate shop primer; blast cleaned to ISO-Sa2½, blasting profile 30 - 75 µm (1.2 – 3.0 mils)
- Steel with approved zinc silicate shop primer; weld seams and areas of shop primer damage or break down should be blast cleaned to Iso-Sa 2½ blasting profile 30 – 75 µm (1.2 – 3.0 mils): [1] For shop primer with IMO type approval; no additional requirements; [2] For shop primer without IMO type approval; blast cleaned to ISO-Sa2 removing at least 70% of intact shop primer, blasting profile 30 – 75 µm (1.2 – 3.0 mils)
- Dust quantity on the surface to be coated must not exceed rating "1" for dust size class "3", "4" or "5" (ISO 8502-3-2017). Lower dust size classes (“1” and/or “2”) to be removed if visible without magnification.
- Primed steel or previous coat must be dry and free from any contamination

Atmospheric exposure conditions

- Steel; blast cleaned to ISO-Sa2½, blasting profile 30 - 75 µm (1.2 – 3.0 mils) or according to ISO-St3
- Shop primed steel; pretreated to SPSS-Pt3
- Galvanized steel must be free from grease, salts and any contamination
- Galvanized steel must be cleaned by solvent or roughened by sandpaper
- Coated steel; hydrojetted to VIS WJ2L (blasting profile 30 – 75 µm (1.2 – 3.0 mils))
- Primed steel or previous coat must be dry and free from any contamination

SIGMAPRIME® 200 SERIES

Substrate temperature and application conditions

- 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
- Relative humidity during application and curing should not exceed 85%

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

7 hours at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life

Air spray

Recommended thinner

THINNER 91-92

Volume of thinner

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

Nozzle orifice

1.5 – 2.0 mm (approx. 0.060 – 0.079 in)

Nozzle pressure

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

SIGMAPRIME® 200 SERIES

Airless spray

Recommended thinner
THINNER 91-92

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

Nozzle orifice
Approx. 0.53 – 0.74 mm (0.021 – 0.029 in)

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

Brush/roller

Recommended thinner
No extra thinner is necessary

Volume of thinner
Up to 5% THINNER 91-92 can be added if desired

Cleaning solvent
THINNER 90-53

ADDITIONAL DATA

Spreading rate and film thickness – SIGMAPRIME 200	
DFT	**Theoretical spreading rate**
75 µm (3.0 mils)	7.6 m^2/l (305 ft^2/US gal)
125 µm (5.0 mils)	4.6 m^2/l (183 ft^2/US gal)
160 µm (6.3 mils)	3.6 m^2/l (145 ft^2/US gal)
200 µm (8.0 mils)	2.9 m^2/l (114 ft^2/US gal)

Note: Max. dft: Dry Film Thickness of 2000 µm (80.0 mils) may occur occasionally (minor areas) where multiple overlapping is unavoidable (i.e. around scallops, corners, erection joint lines etc.). PPG must be consulted in case of DFT readings fall outside this recommendation.

SIGMAPRIME® 200 SERIES

Spreading rate and film thickness – SIGMAPRIME 200 K	
DFT	**Theoretical spreading rate**
100 µm (4.0 mils)	6.0 m^2/l (241 ft^2/US gal)
125 µm (5.0 mils)	4.8 m^2/l (193 ft^2/US gal)
160 µm (6.3 mils)	3.8 m^2/l (153 ft^2/US gal)
200 µm (8.0 mils)	3.0 m^2/l (120 ft^2/US gal)

Note: Max. dft: Dry Film Thickness of 2000 µm (80.0 mils) may occur occasionally (minor areas) where multiple overlapping is unavoidable (i.e. around scallops, corners, erection joint lines etc.). PPG must be consulted in case of DFT readings fall outside this recommendation.

Overcoating interval for DFT up to 160 µm (6.3 mils)						
Overcoating with...	**Interval**	**5°C (41°F)**	**10°C (50°F)**	**20°C (68°F)**	**30°C (86°F)**	**40°C (104°F)**
various two-pack epoxy coatings	Minimum	13 hours	6 hours	2.5 hours	1.5 hours	1 hour
	Maximum exposed to direct sunshine	3 months	3 months	3 months	3 months	3 months
	Maximum NOT exposed to direct sunshine	6 months	6 months	6 months	6 months	6 months

Note: Surface should be dry and free from any contamination

Curing time for DFT up to 160 µm (6.3 mils)			
Substrate temperature	**Dry to touch**	**Dry to handle**	**Full cure**
5°C (41°F)	5 hours	14 hours	21 days
10°C (50°F)	3 hours	8 hours	14 days
20°C (68°F)	1.5 hours	4 hours	7 days
30°C (86°F)	45 minutes	2.5 hours	5 days
40°C (104°F)	30 minutes	1.5 hours	4 days

Note: 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**
15°C (59°F)	10 hours
20°C (68°F)	7 hours
30°C (86°F)	4 hours

SIGMAPRIME® 200 SERIES

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

• 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
• PPG PROTECTIVE & MARINE COATINGS' BALLAST TANK WORKING PROCEDURES NEW-BUILDING		

WARRANTY

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product. THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

LIMITATIONS OF LIABILITY

IN NO EVENT WILL PPG BE LIABLE UNDER ANY THEORY OF RECOVERY (WHETHER BASED ON NEGLIGENCE OF ANY KIND, STRICT LIABILITY OR TORT) FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO, ARISING FROM, OR RESULTING FROM ANY USE MADE OF THE PRODUCT. The information in this sheet is intended for guidance only and is based upon laboratory tests that PPG believes to be reliable. PPG may modify the information contained herein at any time as a result of practical experience and continuous product development. All recommendations or suggestions relating to the use of the PPG product, whether in technical documentation, or in response to a specific inquiry, or otherwise, are based on data, which to the best of PPG's knowledge, is reliable. The product and related information is designed for users having the requisite knowledge and industrial skills in the industry and it is the end-user's responsibility to determine the suitability of the product for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk. PPG has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, PPG does not accept any liability arising from any loss, injury or damage resulting from such use or the contents of this information (unless there are written agreements stating otherwise). Variations in the application environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results. This sheet supersedes all previous versions and it is the Buyer's responsibility to ensure that this information is current prior to using the product. Current sheets for all PPG Protective & Marine Coatings Products are maintained at www.ppgpmc.com. The English text of this sheet shall prevail over any translation thereof.

SIGMAPRIME® 200 SERIES

Depending on specific country of application the following versions are available:

Article code	Color	Reference
202391	SIGMAPRIME 200: yellow/green	4009002200 (202390 base, 202389 hardener)
211291	SIGMAPRIME 200: grey	9515052200 (211282 base, 202389 hardener)
244820	SIGMAPRIME 200 K: grey	9515052150 (243529 base, 240992 hardener)
244832	SIGMAPRIME 200 K: redbrown	2008002150 (243540 base, 240992 hardener)
330749	SIGMAPRIME 200 K: alu light	9000002150 (330748 base, 240992 hardener)
330752	SIGMAPRIME 200 K: alu yellow	9300002150 (330751 base, 240992 hardener)