

DESCRIPTION

One component, high-build heat-resistant inert multipolymeric matrix coating to prevent corrosion under insulation (CUI) of carbon and stainless steel to temperatures ranging up to 650°C (1200°F) and for cryogenic service on stainless steel from -185°C to 538°C (-300°F to 1000°F). Also to be used as a primer on non-insulated steel in a system with *PPG HI-TEMP* topcoats.

PRINCIPAL CHARACTERISTICS

- Formulated to prevent chloride induced stress corrosion cracking of stainless steel and has been tested by an independent laboratory for low leachable chlorides, sulfides and halides. It helps protect against chlorides from the atmosphere and by-products of process operations, which may be incorporated in the insulation from coming in contact with stainless steel
- Can be hot applied direct to substrates with a temperature up to 316°C (600°F) eliminating the need for costly shutdown during maintenance
- Can be topcoated with a full range of heat resistant *PPG HI-TEMP* topcoats
- Resistant to thermal shock and thermal cycling in intermittent (wet, steam, dry) service
- Can be applied to tightly adhering rust in maintenance and repair situations
- Protects cryogenic equipment in continuous or cyclic operation from -185°C to 538°C (-300°F to 1000°F)
- Provides an UV-resistant, chalking-free film with no maximum recoat interval, regardless of operating temperature, as long as the surface to be recoated is clean and free of all contaminants

COLOR AND GLOSS LEVEL

- Black, gray and light gray
- Flat

Note: Minor color change may occur in exposed service, but corrosion protection will not be compromised

BASIC DATA AT 20°C (68°F)

Number of components	One
Mass density	1.92 kg/l (16 lb/US gal)
Volume solids	65% + 2%
VOC (Supplied)	Maximum 210 g/kg (Directive 1999/13/EC, SED) Maximum 420 g/l (3.5 lb/gal)
Temperature resistance (continuous)	To 650°C (1200°F)
Temperature resistance (intermittent)	To 760°C (1400°F)
Cryogenic service	-185°C (-300°F) to 538°C (1000°F)
Recommended dry film thickness	125 to 150 µm (5.0 to 6.0 mils) per coat
Theoretical spreading rate^A	5.2 m ² /l for 125 µm (208 ft ² /US gal for 5.0 mils)
Dry to touch^B	6 hours
Dry to handle	24 hours
Shelf life	2 years when stored at 4°C to 38°C (40°F to 100°F)

^A See ADDITIONAL DATA – Spreading rate and film thickness

^B See ADDITIONAL DATA - Overcoating intervals



RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Carbon steel

- All surfaces to be coated with *PPG HI-TEMP 1027* must be free of all weld splatter, oil, dirt, grease, and all other contaminants, especially salts. Round off all rough welds and sharp edges.
- In maintenance and repair situations, *PPG HI-TEMP 1027* can be applied over a surface in which tightly adhering rust is still present; remove all rust scale and loosely adhering rust until glints of bright metal are visible. The remaining rust must be tightly adherent and not easily removed by lightly wiping with a cloth.
- *PPG HI-TEMP 1027* should only be used to overcoat inorganic zinc or itself. When overcoating aged inorganic zinc, prepare a small test patch and check for adhesion. If previously applied coatings other than inorganic zinc or *PPG HI-TEMP 1027* are *not fully removed by the method of surface preparation utilized, feather the edges of any remaining old coating, and use PPG HI-TEMP 1027* to spot prime only the areas where the substrate is exposed.

Non-insulated surfaces

- Recommended is dry abrasive blast cleaning to SSPC-SP 6, "Commercial Blast" (ISO-Sa 2) with a 25 to 50 µm (1.0 to 2.0 mils) profile
- When abrasive blast cleaning is not an option, the following methods are acceptable: (1) SSPC-SP 15 "Commercial Grade Power Tool Cleaning", with a minimum 25 µm (1.0 mil) profile; (2) SSPC-SP 12, "Surface Preparation by Water-jetting Prior to Recoating" to meet the visual definition of WJ-3, "Thorough Cleaning." Use potable water; (3) SSPC-SP3, "Power Tool Cleaning" (ISO-St 3) or SSPC-SP 2, "Hand Tool Cleaning" (ISO-St 2).

Insulated surfaces

- Recommended is dry abrasive blast cleaning to SSPC-SP 6, "Commercial Blast" (ISO-Sa 2) with a 25 to 50 µm (1.0 to 2.0 mils) profile
- When abrasive blast cleaning is not an option, the following methods are acceptable: (1) SSPC-SP 15 "Commercial Grade Power Tool Cleaning", with a minimum 25 µm (1.0 mil) profile; (2) SSPC-SP 12, "Surface Preparation by Water-jetting Prior to Recoating" to meet the visual definition of WJ-3, "Thorough Cleaning." Use potable water. All existing coating must be removed except for aged inorganic zinc or existing *PPG HI-TEMP 1027*; (3) Power or hand tool cleaning to remove all existing coating except for aged inorganic zinc or existing *PPG HI-TEMP 1027*

Stainless steel

All surfaces to be coated with *PPG HI-TEMP 1027* shall be free of all weld splatter, oil, dirt, grease, and all other contaminants, especially salts. Round off all rough welds and sharp edges.

Note: Do not use chlorinated solvents on stainless steel surfaces

Non-insulated and insulated surfaces

- Small surfaces may be cleaned with a chlorinated-free solvent. Large surfaces may be cleaned utilizing a high- or low-pressure wash or steam cleaning with an alkaline detergent, followed by a freshwater rinse. Water used should be potable grade or better and should be checked to assure minimal salt content. Do not use any chemical additives in the rinse water.
- An anchor profile is not mandatory for adhesion of *PPG HI-TEMP 1027* on stainless steel surfaces. As an option, following cleaning, a light abrasive sweep blast using an appropriate chloride-free abrasive may be performed. After completion of this mechanical surface preparation, rinse the surface with potable grade water or better. Always allow rinsed surfaces to dry before coating.



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Substrate temperature

- Application to ambient substrate: should be above 10°C (50°F) and below 66°C (150°F), and at least 3°C (5°F) above dew point during application and curing
- Application to hot substrate: should be above 66°C (150°F) and below 316°C (600°F)

Note: For application to substrates over 260°C to 316°C (500°F to 600°F) a PPG representative needs to be consulted.

SYSTEM SPECIFICATION

Insulated and non-insulated service: applied direct to ambient or hot carbon or stainless steel

- PPG HI-TEMP 1027: 125 to 150 µm (5.0 to 6.0 mils) DFT
- PPG HI-TEMP 1027: 125 to 150 µm (5.0 to 6.0 mils) DFT

Note:

- Third layer optional at 125 to 150 µm (5.0 to 6.0 mils) DFT; Total 375 to 450 µm (15.0 to 18.0 mils) DFT
 - For insulated service, apply PPG HI-TEMP 1027 to achieve a minimum of 250 µm (10.0 mils) DFT
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Primer/ topcoat system – non-insulated service: applied direct to ambient or hot carbon and stainless steel

- PPG HI-TEMP 1027: 125 to 150 µm (5.0 to 6.0 mils) DFT
 - PPG HI-TEMP topcoats ambient apply: PPG HI-TEMP 500 VS or PPG HI-TEMP 1000 VS, hot apply: PPG HI-TEMP 500 VHA or PPG HI-TEMP 1000 VHA
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Cryogenic – insulated and non-insulated service: ambient stainless steel with service temperature range of -73°C to 204°C (-100°F to 400°F)

- PPG HI-TEMP 1027: 125 to 150 µm (5.0 to 6.0 mils) DFT
 - PPG HI-TEMP 1027: 125 to 150 µm (5.0 to 6.0 mils) DFT; Total 250 to 300 µm (10.0 to 12.0 mils) DFT
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Cryogenic – insulated and non-insulated service: ambient stainless steel with service temperature range of -185°C to 538°C (-300°F to 1000°F)

- PPG HI-TEMP 1027: 125 to 150 µm (5.0 to 6.0 mils) DFT

Note: Do not exceed 200 µm (8.0 mils) total DFT



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INSTRUCTIONS FOR USE

- *PPG HI-TEMP 1027* is a heavy bodied material; use mechanical agitation for mixing immediately before application and as needed during application. Be sure any settled solids are incorporated during mixing. If thinning is needed, thin only with PPG thinners and in accordance with applicable regulations. Agitate as needed during application.
- For ambient application, surface temperature should be a minimum of 3°C (5°F) above dew point. Do not apply to surface temperatures below 10°C (50°F).
- Do not exceed recommended maximum dry film thicknesses for the appropriate service type and temperatures.
- It is essential to apply multiple thin passes of *PPG HI-TEMP 1027* during application to hot steel. This process, similar to mist coating, prevents blistering and also allows solvent to escape without leaving pinholes.
- When applying to hot steel, use of a solvent other than *THINNER 21-25* or *PPG HI-TEMP #5* could produce a fire hazard, and dry spray and poor film characteristics may also result. If blisters are observed in *PPG HI-TEMP 1027* applied to hot surfaces, immediately brush out the blisters before they set, using a wood-handled China bristle brush.
- For best results, do not apply *PPG HI-TEMP 1027-00* black or *PPG HI-TEMP 1027-90* gray over *PPG HI-TEMP 1027-9003* light gray.

Air spray

Recommended thinner - application to ambient substrate below 66°C (150°F)

- *THINNER 21-06* (*PPG HI-TEMP THINNER 11/AMERCOAT 65*)
- *THINNER 91-10* or *PPG HI-TEMP THINNER 10* (VOC compliant)

Recommended thinner - application to hot substrate at 66°C (150°F) up to 260°C (500°F)

THINNER 21-25 or *PPG HI-TEMP THINNER 5*

Volume of thinner

0 – 5%, depending on required thickness and application conditions

Nozzle orifice

1.8 – 2.2 mm (approx. 0.071 - 0.087 in)

Nozzle pressure

0.4 – 0.6 MPa (approx. 4.1 – 5.5 bar; 60 – 80 p.s.i.)



Airless spray

Recommended thinner - application to ambient substrate below 66°C (150°F)

- THINNER 21-06 (PPG HI-TEMP THINNER 11/AMERCOAT 65)
- THINNER 91-10 or PPG HI-TEMP THINNER 10 (VOC compliant)

Recommended thinner - application to hot substrate at 66°C (150°F) up to 260°C (500°F)

THINNER 21-25 or PPG HI-TEMP THINNER 5

Volume of thinner

0 – 5%, depending on required thickness and application conditions

Nozzle orifice

0.43 – 0.53 mm (approx. 0.017 – 0.021 in)

Nozzle pressure

13.8 MPa (approx. 138 bar; 2000 p.s.i.)

Brush/roller

Recommended thinner - application to ambient substrate below 66°C (150°F)

- THINNER 21-06 (PPG HI-TEMP THINNER 11/AMERCOAT 65)
- THINNER 91-10 or PPG HI-TEMP THINNER 10 (VOC compliant)

Recommended thinner - application to hot substrate at 66°C (150°F) up to 260°C (500°F)

THINNER 21-25 or PPG HI-TEMP THINNER 5

Volume of thinner

Up to 5% of the thinners listed above can be added if desired

Note: Spray application is recommended but when spray painting is not possible, brush or roller may be used. The coating should be applied with a suitable brush or short nap roller. Brushing and rolling only in one direction may aid in building film thickness. For more specific instructions, refer to the PPG HI-TEMP application guidelines.

Cleaning solvent

- THINNER 21-06 (PPG HI-TEMP THINNER 11 / AMERCOAT 65)
 - THINNER 91-10 or PPG HI-TEMP THINNER 10 (VOC compliant)
 - THINNER 21-25 or PPG HI-TEMP THINNER 5
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ADDITIONAL DATA

Spreading rate and film thickness – Black and Colors	
DFT	Theoretical spreading rate
125 µm (5.0 mils)	5.2 m ² /l (208 ft ² /US gal)
150 µm (6.0 mils)	4.3 m ² /l (174 ft ² /US gal)

Curing time for DFT up to 150 µm (6.0 mils)		
Substrate temperature	Dry to recoat/topcoat	Dry to handle/ship
10°C (50°F)	24 hours	24 hours
20°C (68°F)	6 hours	24 hours
38°C (100°F)	5 hours	24 hours
150°C (302°F)	15 minutes	N/A

Note: Drying times can vary based on environmental and substrate conditions. Do not exceed maximum dry film thickness recommendations as this can affect dry times.

SAFETY PRECAUTIONS

The product is for use only by professional applicators in accordance with information in this product data sheet and the applicable material safety data sheet (MSDS). Refer to the appropriate MSDS before using this material. All use and application of this product should be performed in compliance with all relative federal, state and local, health, safety and environmental regulations or in compliance with all pertinent local, regional and national regulations as well as good safety practices for painting, and in conformance with recommendations in SSPC PA 1, "Shop, Field and Maintenance Painting of Steel."

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 SEE INFORMATION SHEET 1410
- EXPLANATION TO PRODUCT DATA SHEETS SEE INFORMATION SHEET 1411

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