PetraShield Thermal Barrier TRC-2

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Coating Type	Air curing, inorganic, single component, factory blended
Description	High Reflectivity, High Temperature (550°C) Coating
Features and Benefits	• Room temperature and air cure formula • High reflectivity 85%, equivalent to 0.15 emissivity • Provides over 30% heat loss reduction • Corrosion inhibitor with high chemical stability • Moisture resistant
Color	Silver, metallic
Dry Film Thickness	0.4 – 0.8 mils (10 – 20 microns) in a single coat
Solid Content	60% by weight
Theoretical Coverage	600 ft^2/gallon at 1 mil

SUBSTRATE & SURFACE PREPARATION

General	Careful surface preparation is essential for the maximum performance of this material. Remove grease and other surface contaminants with a degreasing process.
Steel	Blast the surface of the metal to remove any rust, scale, or other contaminants. The blasted texture is necessary for maximum adhesion. Use a dry 46 to 100 grit aluminum oxide or alternative material. Do not use oily or contaminated blasting media. After blasting, do not touch any surfaces with bare skin where coating will be applied. Blow off the substrates using compressed air. Ensure the air supply is filtered from moisture and oil. Safety goggles or a face shield are recommended. Work in a well-ventilated area or wear a respirator.

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MIXING & THINNING

Mixing	Mix the PetraShield™ until no solids remain at the bottom of the container and the product is completely mixed. Incomplete mixing or insufficient dispersion of the solids may result in product failure. No dilution is needed for application, the product is ready to use.
Thinning	Not required. Thinning might result in degradation of thermal performance.

APPLICATION GUIDELINE

Preparation	• Do not touch any surfaces with bare skin where coating will be applied. Only use clean gloves, such as nitrile or powder-free latex. • Blow off the substrates using compressed air. Ensure the air supply is filtered from moisture and oil. Safety goggles or a face shield are recommended. Work in a well-ventilated area or wear a respirator. • Arrange parts for the best access with the spray gun. Ensure the spray gun's air supply is filtered from moisture and oil.
Spraying	• Apply the coating with an HVLP gravity fed gun with a 0.8mm fluid nozzle and the corresponding fluid needle are recommended. The air pressure should be set to 25 PSI resulting in an approximately 2-3" fan pattern. Spray from approximately 3-5 inches from the substrate until the surface is covered. Overlap subsequent passes by half, continuing to apply new coating while the previously applied pass is still wet. Spray with sufficient volume so the PetraShield does not spray dry, which is when the coating dries in the air before reaching the part. • A single coating should be sufficient for a 0.5 to 1.0 mil film thickness. Work from the most difficult areas towards the easiest to reduce running, sagging, or excessive coating application. • Allow the parts to air dry. Use caution to avoid touching the coating while it is curing. The parts will be cured after 24 hours at room temperature. Curing may be accelerated at elevated temperatures, as shown in the following table.

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CURING SCHEDULE

Sample Temp.	Final Cure
Room Temperature	24 hours
80 °C	2 hours
130 – 180 °C	1 hour
240 °C	Several minutes

PERFORMANCE DATA

Property	Measured Value	Testing Method
Coating Method	Spraying	
Shelf Life	6 Months from date of shipment	
Specific Gravity (g/ml)	1.12 ± 0.05	
Thickness (um)	15 ± 3	Coating Thickness Gauge PCE-CT27
Cohesion - Scratch Hardness (MPa)	5 ± 2	ASTM C1624-05, un-failed load
Hardness (Mohs)	2.5 ± 0.5	Mohs Hardness (1-10)
Adhesion - Bend Test (deg.)	>40	ASTM D522M
Total Reflectivity at RT - 550°C	85 %	Calculation from Blackbody FTIR (ASTM E408-13)
Max Operating Temp	550 °C (1022 °F)	Tested in Furnace
Corrosion Inhibition (h, stopped with no sign of corrosion)	500	ASTM B117 equivalent on carbon steel