Castolin Eutectic®
Eutectic Castolin

Aluminum Oxide Powder

MetaCeram® 25010

- Good resistance to abrasive wear and erosion at high temperatures
- Good thermal and electrical insulation
- May be used with a variety of thermal spray systems
- Non-wetting to most molten metals and slags
- Low coefficient of friction / Highly resistant to adhesive wear

MetaCeram® 25010

MetaCeram 25010 is a 99% + aluminum oxide coating with a particle size distribution tailored for use with high energy combustion spray systems like the TeroDyn 2000, TeroDyn 3000 and the CDS 8000. The powder is also suitable for use with conventional plasma non-transferred arc coating systems.

Coatings of MetaCeram 25010 are hard, dense and well suited for applications where good thermal and/or electrical insulating properties are required. Coatings are also resistant to most high temperature corrosion environments including resistance to molten metals and slags.

A bond coat is required prior to applying 25010 to ensure the best possible adhesion. Bond coat materials should be selected based on substrate type and service temperature.

The use of Proxon 21031 is recommended for high temperature service or where corrosion is a concern. For room temperature service, 50000 may be used as the bond coating. The sealer also improves the dielectric resistance of the coating system.

TECHNICAL DATA

Typical Values*	
Typical Macro-hardness:	50 HRC (15N converted)
Typical Micro-hardness:	860 DPH
Density:	3.4 g/cc
Thickness Limit:	0.020 inches
Max. Service Temperature:	3,000°F (1650°C)
Porosity:	<10%
Dielectric Resistance:	150-400 volts/mil
Carney Flow Rate:	14 seconds
Bulk Density:	1.8 g/cc
Powder Coverage:	0.021 lb/ ft² @ 0.001"
Typical Melting Point:	3720°F (2050°C)

PROCEDURE FOR USE

Coating Procedure: Pre-heat the bond-coated part to 300°F and maintain in the 300 – 400°F temperature range during coating. Rotational speed should be 150 to 200 SFPM and traverse speed should be fast enough to apply about 0.001" coating thickness per pass. Coatings applied at to low a temperature will be soft. Coatings applied at to high a temperature will tend to crack or delaminate during cooling. Exact pre-heat temperature and the torch to workpiece speed will depend heavily on the geometry of the part.

Finishing Procedure: Coatings of 25010 should be rough ground with 120 grit silicon carbide or 150 grit diamond wheels. Finish grind using 400-grit silicon carbide or diamond. When using coolant, it is important to consider sealing the coating prior to grinding.

Recommended Parameters - ***Bond Coat Must Be Used***

TD 2000*

Nozzle:	RL 210 or RL 210-W
RotoJet:	RPA 3@40psi air
Module Adaptor:	Aqua
Oxygen:	50 psi / 35 flow
Acetylene:	12 psi / 75 flow
T-Valve Setting:	6 clicks
Coating Rate:	3 lb/hr
Spray Distance:	4 to 6 inches

TD 3000*

Nozzle:	RL 3310
RotoJet:	None
Oxygen:	50 psi / 36 flow
Acetylene:	12 psi / 60 flow
Terometer:	50
Coating Rate:	2.5 lb/hr
Spray Distance:	3.5 to 4 inches

CDS 8000*

Flame Setting:	SSM 30 - Neutral
Powder Module:	1 - 2
Torch Air:	45 psi
Spray Distance:	4 inches
Vc Rotation:	130 SFPM
Advance:	0.2 in/rev

**All parameters are for Acetylene, please contact Eutectic Techincal Services for information on parameters for Propylene.*

TYPICAL APPLICATIONS

- Pump Sleeves
- Soldering Tips
- Pyrometer Probes
- Electrical Insulation
- Pouring Troughs
- Thermal Insulation

Observe normal spraying practices, respiratory protection and proper air flow pattern advised. For general spray practices, see AWS Publications AWS C2. 1-73, "Recommended Safe Practices for Thermal Spraying and AWS TSS-85, "Thermal Spraying, Practice, Theory and Application." Thermal spraying is a completely safe process when performed in accordance with proper safety measures. Become familiar with local safety regulations before starting spray operations.DO NOT operate your spraying equipment or use the spray material supplied, before you have thoroughly read the equipment instruction manual. Refer to the Eutectic website for Material Safety Data Sheet (MSDS) information. DISREGARDING THESE INSTRUCTIONS MAY BE HAZARDOUS TO YOUR HEALTH.

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