Boromet™ 144

Hybrid MATERIALS LLC

Introduction

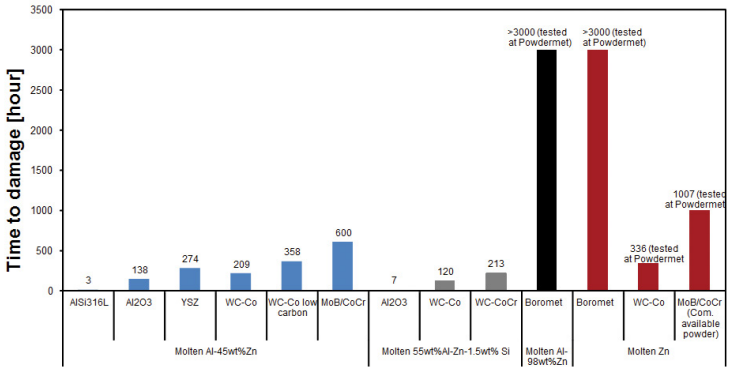
Boromet™ 144 corrosion- and wear-resistant nano-engineered metal-boride based cermets that also incorporate solid lubricants and surface tension modifiers provide ultimate wear and corrosion resistance in metal processing applications for both coating new components and repair of existing components in applications like zinc pot (galvanizing) rolls, die casting equipment, metal processing equipment (casting, pumping, flow control), metal forming equipment (stamping, forging), and potentially large bearings for wind turbines and power turbine applications.

Snapshot

Characteristic	Data
Classification	Metal Borides
Chemistry	Fe-Mo-B
Manufacture	Agglomerated and sintered
Morphology	Spheroidal
Purpose	Molten corrosion resistance
Apparent Density	1.29 g/cm³
Service Temperature	Up to 1500 °C (2732 °F)
Process	HVOF

The chart below depicts the performance of Boromet™ 144 liquid metal corrosion coating solution with the currently used solutions. As can be seen in the chart Boromet™ 144 coatings offer at least 6X extended life for coatings, and thus for the components used with liquid metals leading to significant reductions (~70%) in downtime costs.

Comparison of Boromet™ 144 with currently-used alternatives



Melting points: Al45%Zn – 620°C; 55%Al-Zn-1.5%Si – 580-600°C; Zn – 420°C

Typical Applications

- Galvanizing
  - Pot rolls
- Metal Processing
  - Casting
  - Pumps
  - Flow Controls
- Metal Forming
  - Stamping
  - Forging
  - Die Casting
- Power
  - Bearings for wind and power turbines

Material Information

Chemical Composition						
	Weight Percent (Nominal)					
	Mo	B	Fe	Cr	W	Co
Boromet™ 144	48-50	6-8	30-32	0-1	0-1	0-1

Particle Size Distribution and Apparent Density			
	Nominal Range (µm)	**Primary Grain Size**	**Apparent Density** (g/cm³)
Boromet™ 144	-45 + 10	100-400 nm	6.6

Coating Information

Key Thermal Spray Coating Information	
Specification	**Typical Data**
Recommended Process	HVOF
Microhardness (HV0.3)	650-800
Porosity	Less than 1 %
Maximum Service Temperature	Up to 1500 °C (2732 °F)
Coating Parameter Sheets	
Please contact us at sales@hybridmaterialsllc.com to receive coating parameters for HVOF and HVAF spray guns.	

Safety and Handling

Handling Recommendations

- Store in the original container in a dry location.
- Tumble contents prior to use to prevent segregation.
- Open containers should be stored in a drying oven to prevent moisture pickup.

Safety Recommendations

- Please contact us at sales@hybridmaterialsllc.com to receive the MSDS for this specific product for your country.

© **Hybrid Materials LLC.** 24112 Rockwell Dr., Euclid, OH 44117
Phone: 216-453-0866 **Fax:** 216-481-0749 www.hybridmaterialsllc.com