



# MOMENTIVE

performance materials

## Metallist™ Intermetallic Composite Boats

Momentive Performance Materials Metallist line of intermetallic composite (IMC) boats are manufactured to provide an optimal evaporation source which meets your unique requirements.

### Highest Quality Raw Materials

Metallist IMC boats are composed of Boron Nitride and Titanium Diboride hot-pressed at high temperature. Momentive produces both of these powders in a new state-of-the-art facility in Strongsville, Ohio. Computerized process control of this continuous operation assures powders with outstanding consistency.

### Rigorous Process Control

Momentive Performance Materials employs a thorough regime of SPC and Six-Sigma tools to the manufacture of Metallist IMC boats. Boats are characterized based on their resistivity, machining tolerances, strength, and other physical characteristics. More than 25 variables are continuously documented to provide our customers with products that help minimize process variability.

### Designed to Your Specifications

Since no two metallizers operate the same, we tailor our boats to meet your electrical requirements and design specifications. We offer a choice of ceramic formulations to fit the high deposition rates required for the packaging industry as well as the slower, more precise rates typical of solar/microwave applications.

### Technical Support

The technical staff of Momentive Performance Materials is at your service, worldwide, to provide design and applications assistance, and to help solve your metallization problems. Our At-the-Customer, For-the-Customer (ACFC) approach brings proven Six-Sigma rigor to your manufacturing operation. Additionally, our capability to provide complete operator training assures greater understanding of IMC boats and has proven to be a significant factor in optimizing boat performance.



### Applications for Metallist IMC Boats

- Protective barrier coatings - food and beverage
- High reflectivity coatings - automotive
- Functional coatings - television & computer

### Momentive Metallist IMC Boat Products:

**Classic** - an industry workhorse for over 30 years

**New StabilizerPlus™** - improved wet-out, longer stability delivers up to 20% more output per boat set

### Boron Nitride (BN)

- Thermal Conductor
- Electrical Insulator
- High Thermal Shock Resistance
- Resistant to Molten Metal Attack
- High Temperature Stability
- Non-Wetting



### Titanium Diboride (TiB<sub>2</sub>)

- Thermal Conductor
- Electrical Conductor
- Combined Strength and Hardness
- Resistant to Molten Metal Attack



### BN/TiB<sub>2</sub> Composites

- High (>2000°C) Cracking Temperature -> High Evaporation Rate
- High Theoretical Density -> Long Boat Life
- Low Thermal Expansion -> Reduced Operating Stresses
- Low Moisture Pickup

Property	Value
Resistivity (@ 25° C)	400 - 1000 MOC*
Flexural Strength (@ 25° C)	13,000 psi 90 MPa
Rockwell Hardness	123
Density (% of Theoretical)	95%
CTE	7.0 ppm/° C
Permanent Expansion	0.08%
Moisture Pickup (100% Rel. Humidity @ 25° C for 150 hrs.)	0.3%

\* Micro-ohm-centimeter, custom ranges also available

### Dimensional and Resistivity Specifications

Property	Ordering Increments	Value
Length	5 mm	+/- 0.020" +/- 0.5 mm
Width	1 mm	+/- 0.002" +/- 0.05 mm
Thickness	1 mm	+ 0.010/- 0.000" + 0.254/- 0.00 mm
Cavity Floor Thickness (Nominal Boat Thickness - Nominal Cavity Thickness)	0.5 mm	+/- 0.005" +/- 0.127 mm
Resistivity (@ 25° C)		
Classic	50 MOC	+/- 50 MOC
StabilizerPlus™	100 MOC	+/- 100 MOC

Custom sizes, tolerances, and ranges are available for special applications

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