



MOMENTIVE

performance materials

Boron Nitride Powder Grades HCR48, HCJ48, and HCM

Momentive Performance Materials' boron nitride (BN) powder grades HCR48, HCJ48, and HCM are large, high-density agglomerates, of $\sim 10 \mu\text{m}$ crystals, with average particle sizes between 175-275 μm and tap densities of $\sim 1 \text{ g/cm}^3$. These features, combined with low average surface areas, give powders that flow readily, withstand harsh processing, and have outstanding thermal characteristics.

HCR48

HCR48 has an average particle size of 250 μm and is the highest density (hardest) grade offered by Momentive Performance Materials. It has higher oxygen and soluble borate levels than most grades, which limits its performance in high-temperature ($>550^\circ \text{C}$) applications.

HCJ48

HCJ48 has an average particle size of 275 μm and offers higher purity than HCR48 with a slightly lower density; it is a more economical alternative to HCM.

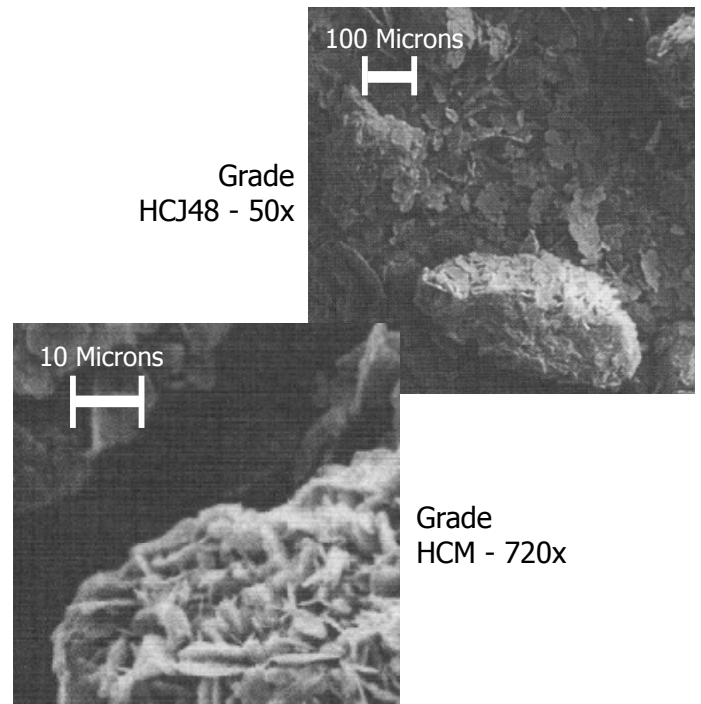
HCM

HCM has a slightly finer average particle size of 175 μm and is processed for outstanding purity, making it appropriate for the most demanding of applications. HCM also has a more uniform particle size distribution and rounded particles due to its unique processing.

Applications

These grades are ideal for use in thermal spray applications as well as metal-matrix and ceramic composites for wear applications such as high-performance brake linings. They are also used in heating elements and adhesives, pastes, and potting compounds with increased thermal conductivity and high electrical resistivity.

Momentive Performance Materials produces over 75 standard and custom grades of BN powders to meet a wide range of application requirements, and has over 40 years of expertise in the synthesis and refinement of boron nitride powders.



Boron Nitride Powder

Grades HCR48, HCJ48, and HCM

General Characteristics of Boron Nitride

- Electrical Insulator
- Low Dielectric Constant and Loss
- High Temperature Stability
- Thermal Conductor
- Lubricious
- Inert
- Non-Wetting

Screen Sizing Analysis

Screen	Grade HCR48	Grade HCJ48	Grade HCM
+20	0	0	0
-20/+60	58.9	72.9	0.9
-60/+100	21.8	13.2	78.8
-100/+150	11.5	5.4	12.7
-150/+200	4.8	3.2	3.5
-200/+325	1.3	2.8	1.6
-325	1.8	2.6	2.4

Typical Properties	Grade HCR48	Grade HCJ48	Grade HCM
Crystal (type)	Hexagonal (Graphitic)	Hexagonal (Graphitic)	Hexagonal (Graphitic)
Color	White	White	White
Mean Particle Size, μm	250	275	175
Crystal Size, μm	10	10	10
Surface Area, m^2/g	2.6	1.3	2.0
Tap Density, g/cc	1.1	0.9	1.0
Oxygen, %	2.5	0.3	0.3
Sol. Borate, %	3	0.1	0.1
Carbon, %	0.2	0.1	0.03

Elemental

Ca, Si	<500 ppm (per element)
Cu, Al, Mg, Fe, K	<100 ppm (per element)
Cl, S	<50 ppm (per element)
Na	<20 ppm
Other Metals	<10 ppm each

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