



# MOMENTIVE

performance materials

## Boron nitride powders enhance plastics processing and finished products.

### **Momentive Performance Materials' boron nitride (BN) powders provide the following benefits when added to plastics:**

#### **Enhance thermal conductivity and electrical insulation**

BN has a high thermal conductivity, especially relative to common fillers, such as talc. BN's soft hexagonal crystalline particles allow excellent particle-to-particle contact that provides a superior thermal path. BN's electrical insulation properties offer superior dielectric strength to plastics.

#### **Improve the nucleation efficiency during processing**

With the ability to control crystal structure and size, Momentive has developed BN grades that nucleate certain plastics, such as Teflon, better than do talc and other common nucleation agents.

#### **Provide slip and wear resistance during processing and for finished products**

Hexagonal BN's graphite-like crystal structure provides excellent lubrication. BN will adhere to surfaces and produce a solid lubricating film, resulting in lower part wear when subjected to sliding or rotating motion. BN is non-abrasive and will provide lubrication through processing.

#### **Enhance mold release**

High temperature resistance and chemical inertness allow BN to perform extremely well as a release agent.

#### **Promote high-temperature stability**

BN is a stable and non-reactive filler with a low coefficient of thermal expansion. These properties make BN a useful reinforcement for materials that are processed at higher temperatures or that are designed for high-temperature service.

### **Engineered to your specifications**

Momentive Performance Materials offers over 80 grades to suit your application, with a broad range of densities, surface areas, and particle sizes. Momentive also has the expertise to tailor the properties of BN powder to meet a broad range of customer requirements.

Momentive Performance Materials is a leading producer of BN and serves the global plastics market with facilities in the U.S., Europe, and Asia.



## Boron Nitride Additives for Plastics

### General Characteristics of Boron Nitride

- Thermal Conductor
- Electrical Insulator
- Low Dielectric Constant/Loss
- High Temperature Stability
- Lubricious
- Inert and Chemically Stable
- Variety of Crystal Sizes and Particle Formations

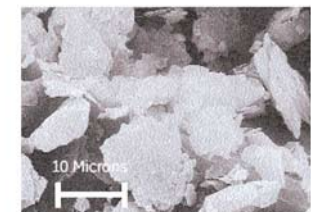
### A wide choice of crystals



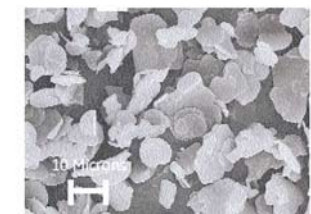
Scanning Electron Micrograph of HCV



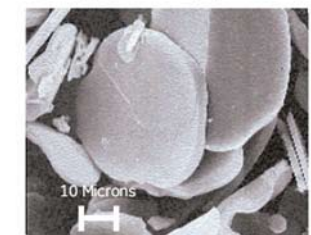
Scanning Electron Micrograph of AC6003



Scanning Electron Micrograph of AC6069



Scanning Electron Micrograph of AC6004



Scanning Electron Micrograph of AC6110

### Typical Properties for Industrial BN Grades

Grade	HCV	AC6003	AC6069	AC6004	AC6110
Crystal Size $\mu$	0.1	0.5	6.0	10.0	45.0
Average Particle Size $\mu$	7-11	7-11	9	12-13	50
Average Surface Area $m^2/g$	40.0	29.0	8.0	2.0	0.6
Tap Density $g/cc$	0.50	0.35	0.26	0.55	0.70
Oxygen %	2.70	2.00	0.40	0.30	0.45
Soluble Borates %	0.30	0.20	0.20	0.15	0.05
Carbon %	0.05	0.03	0.10	0.02	0.10

Additional product specification sheets are available from Momentive Performance Materials. See our PolarTherm\* filler brochure (Pub. No. QTZ-81501) for additional information on the use of boron nitride in thermal applications.

### www.momentive.com

#### SALES OFFICES

#### USA

T: 440.878.5700

F: 440.878.5928

E: cs-na.ceramics@momentive.com

#### GERMANY

T: 49.4152.938.300

F: 49.4152.938.303

E: cs-eur.ceramics@momentive.com

#### JAPAN

T: 81.3.5114.3774

F: 81.3.5114.3779

E: cs-jp.ceramics@momentive.com

#### CHINA

T: 86.21.3860.4500

F: 86.21.5079.3736

E: cs-asia.ceramics@momentive.com

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