



# MOMENTIVE

performance materials

## Boron Nitride Powders NX Grades

Momentive Performance Materials offers an innovative line of boron nitride (BN) powders - grades NX1, NX5, NX9, and NX10. This line of products offers an economical way to achieve many of the benefits of BN in a wide range of applications. The NX line makes BN accessible to users of alternate materials, such as aluminum nitride, alumina, and fused silica, who may have previously ruled out BN.

NX grades are all fine hexagonal crystalline powders (95%-100% -325 mesh), and are available in a range of purities and surface areas to suit your specific applications.

### NX1

Grade NX1 is an ultrafine grade with a submicron mean particle size, making it easy to disperse. It also has the highest surface area of the NX grades.

### NX5

NX5 has a mean particle size of approximately 5 microns. It contains slightly higher oxygen levels than typical BN grades.

### NX9

NX9 has a mean particle size of approximately 9 microns and the lowest surface area of the NX grades; it has a higher level of residual calcium and soluble borates than most BN grades.

### NX10

NX10 has a mean particle size of approximately 10 microns and is a higher purity grade than NX9.

### Applications

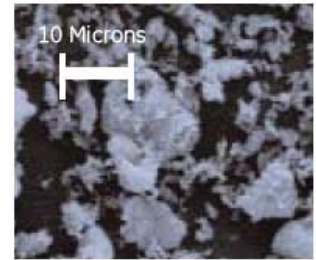
Momentives' NX grades are candidates for use in a wide range of demanding applications for which BN is generally considered, including:

- Lubricants and release agents for high-temperature metal and glass processing
- Refractory coatings
- Base material for hot pressed solids and metal-matrix or ceramic-metal composites
- Processing and final-product enhancement of plastics, including nucleation of solid and foamed products.
- Thermal management materials (adhesives, gap-fillers, encapsulants, polymer matrices, etc.) for electronics applications

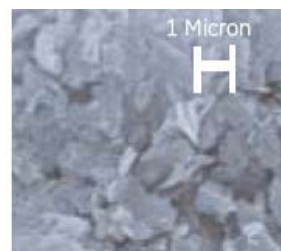
Momentive Performance Materials produces over 80 standard and custom grades of BN powders to meet a wide range of application requirements, and has over 40 years of expertise in the synthesis and refinement of boron nitride powders.



Grade NX1-10,000x



Grade NX5-1000x



Grade NX9-4800x



Grade NX10-4800x

# Boron Nitride Powder

## Grades NX1, NX5, NX9, NX10

### General Characteristics of Boron Nitride

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

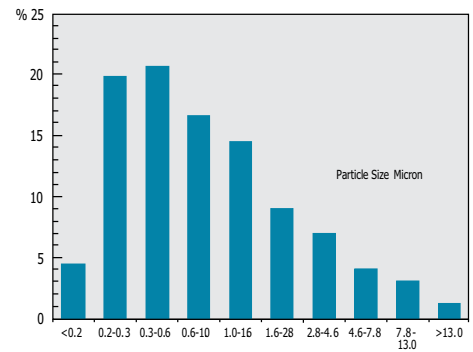
### Typical Properties

| Grade                              | NX1                   | NX5                   | NX9                   | NX10                  |
|------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Crystal (Type)                     | Hexagonal (Graphitic) | Hexagonal (Graphitic) | Hexagonal (Graphitic) | Hexagonal (Graphitic) |
| Color                              | White                 | White                 | White                 | White                 |
| Mean Particle Size $\mu\text{m}$   | 0.7                   | 5.0                   | 9.0                   | 10.0                  |
| Crystal Size $\mu\text{m}$         | 0.2 - 0.5             | 0.2 - 0.5             | 0.2 - 0.5             | 0.2 - 0.5             |
| Surface Area $\text{m}^2/\text{g}$ | 20                    | 16                    | 8                     | 14                    |
| Tap Density $\text{g}/\text{cc}$   | 0.12                  | 0.25                  | 0.50                  | 0.40                  |
| Oxygen %                           | 0.9 - 1.2             | 1.0 - 1.5             | 11.0 - 13.0           | 0.9 - 1.2             |
| Soluble Borates %                  | 0.10                  | 0.10                  | 4.0 - 7.0             | 0.10                  |
| Carbon %                           | 0.03                  | 0.10                  | 0.10                  | 0.10                  |
| Calcium %                          | <0.01                 | <0.01                 | 3.0 - 4.0             | <0.01                 |

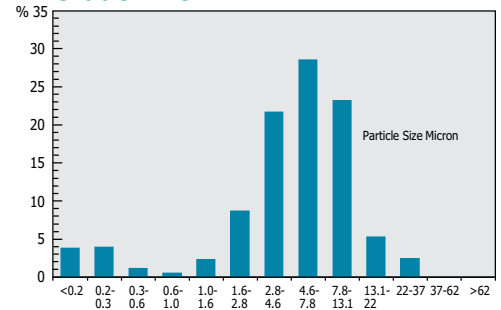
### Elemental

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

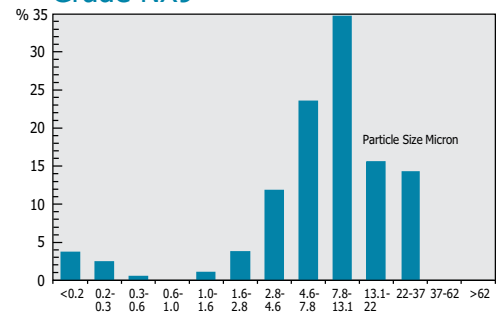
Grade NX1



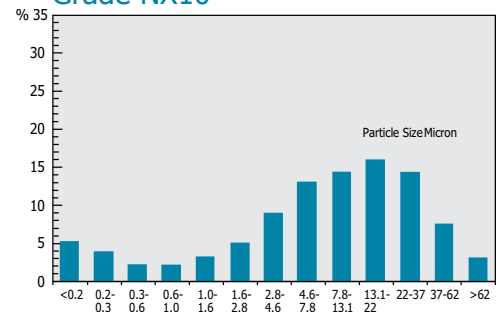
Grade NX5



Grade NX9



Grade NX10



[www.momentive.com](http://www.momentive.com)

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