



# GNP Graystar

Specialty Materials



## TECHNICAL DATA SHEET

### Precision Calcined Alumina

#### Typical Chemistry

|  |         |
|--|---------|
| Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> ) | 99.59 % |
| Silicon Dioxide (SiO <sub>2</sub> )              | 0.03 %  |
| Sodium Dioxide (Na <sub>2</sub> O)               | 0.35 %  |
| Iron Oxide (Fe <sub>2</sub> O <sub>3</sub> )     | 0.03 %  |

#### Physical Characteristics

|               |                                |
|---------------|--------------------------------|
| Crystal Form  | Monocrystalline Alpha Alumina  |
| Shape:        | Hexagonal Platelets            |
| True Density  | 3.95 g/cm <sup>3</sup>         |
| Melting Point | 2000°C                         |
| Hardness      | Knoop (100): 2100<br>Mohs: 9.0 |
| pH            | 7.5 - 11                       |

#### Sizing Available (in Microns)

1, 3, 5, 7, 9, 12, 15, 18, 20, 25, 30, 40, and 50

Suspension treatment available for water and oil-based lapping applications.

#### *Description:*

GNP Graystar's Precision Calcined Alumina is aluminum oxide that has been heated at temperatures in excess of 1,050°C (1,922°F) to drive off nearly all chemically combined water. In this form, alumina has great chemical purity, extreme hardness (9 on the Mohs hardness scale, on which diamond is 10), high density, and a high melting point (slightly above 2,000°C [3,632°F]).

#### *Applications:*

GNP Graystar's Precision Calcined Alumina is used primarily for lapping and polishing of various products including precision optics, piezo electronics, precision bearings, optical glass, sime-conductor quartz, stainless steel, Gallium Arsenide, Germanium, and more.

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Rev. 02/2020

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