



# GNP Graystar

Specialty Materials

AN ISO 9001 CERTIFIED COMPANY



## TECHNICAL DATA SHEET

### Calcined Bauxite

#### Typical Chemistry

|   | Typical  | Specification |
|---|----------|---------------|
| Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> )      | 91.1 %   | 87.0 % min.   |
| Silicon Dioxide (SiO <sub>2</sub> )                   | 4.5 %    | 7.5 % max.    |
| Titanium Dioxide (TiO <sub>2</sub> )                  | 3.1 %    | 3.5 % max.    |
| Iron Oxide (Fe <sub>2</sub> O <sub>3</sub> )          | 1.1 %    | 1.75 % max.   |
| Alkalis (Na <sub>2</sub> O + K <sub>2</sub> O)        | < 0.03 % | ---           |
| Calcium Oxide (CaO)                                   | < 0.02 % | ---           |
| Magnesium Oxide (MgO)                                 | < 0.02 % | ---           |
| Phosphorus Pentoxide (P <sub>2</sub> O <sub>5</sub> ) | < 0.05 % | ---           |
| LOI   | 0.15 %   | 0.50 % max.   |

#### Physical Characteristics

|   |        |             |
|---|--------|-------------|
| Bulk Density (g/cm <sup>3</sup> ):<br>-6+12 USS via<br>ASTM C357 Method | 3.20   | 3.10 min.   |
| Moisture  | 0.12 % | 0.50 % max. |

#### Sizes Available:

See Page 2 for Available Sizing

#### Description:

**GNP Graystar** offers Guyanese bauxite. Guyanese bauxite is the most refractory bauxite available in the world due to its higher alumina content and lower alkali and impurity content. Replacing Chinese bauxite with Guyanese bauxite results in a chemistry/performance upgrade in refractory mixes.

In mortars and plastics, this bauxite will extend the shelf life over Chinese bauxite considerably because it is less reactive in acid and phosphate-bonded refractories.

The mineralogy of Guyanese bauxite is alpha alumina and mullite, so there's no shrinkage or cracking when exposed to hot metal. This product actually has slight expansion at high temperatures versus the shrinkage in Chinese bauxite (containing alpha alumina and glass).

As a ceramic ball-milled product, this may also be used to substitute pricier calcined alumina material in bauxite and mullite mixes.

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## TECHNICAL DATA SHEET

Calcined Bauxite, cont.

| Size      | % Retained |          |             |             |             |             |             |             |             |             |             |             |               |
|-----------|------------|----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|
|           | 3/8"       | 3        | 4           | 6           | 8           | 12          | 16          | 20          | 40          | 100         | 200         | 325         | Pan           |
| USS Sieve | 3/8"       | 3        | 4           | 6           | 8           | 12          | 16          | 20          | 40          | 100         | 200         | 325         | Pan           |
| mm        | 9.5        | 6.7      | 4.74        | 3.35        | 2.36        | 1.7         | 1.18        | 0.85        | 0.425       | 0.15        | 0.075       | 0.045       | Pan           |
| 3 X 0     | 0          | 2<br>0-4 |             | 35<br>24-46 |             | 25<br>15-35 |             | 20<br>10-30 |             |             |             |             | 18<br>8-28    |
| 4 X 0     |            | 0        | 2<br>0-5    |             | 35<br>27-43 |             |             | 40<br>32-48 |             |             |             |             | 23<br>15-31   |
| 6 X 0     |            |          | 0           | 2<br>0-5    | 15<br>8-22  |             |             | 45<br>37-53 | 15<br>8-22  |             |             |             | 23<br>15-31   |
| 8 X 0     |            |          |             | 0           | 3<br>0-6    |             |             | 47<br>37-57 | 15<br>8-22  |             |             |             | 35<br>27-43   |
| 3 X 4     | 0          | 4<br>0-8 | 70<br>60-80 | 22<br>16-28 |             |             |             |             |             |             |             |             | 4<br>0-8      |
| 3 X 6     | 0          | 3<br>0-6 |             | 75<br>63-87 | 20<br>12-28 |             |             |             |             |             |             |             | 2<br>0-4      |
| 3 X 8     | 0          | 2<br>0-4 | 25<br>15-35 |             | 60<br>50-70 |             |             | 10<br>5-15  |             |             |             |             | 3<br>0-6      |
| 4 X 8     |            | 0        | 4<br>0-8    |             | 82<br>72-92 |             |             | 10<br>5-15  |             |             |             |             | 4<br>0-8      |
| 6 X 16    |            |          | 0           | 2<br>0-4    |             | 61<br>49-73 | 30<br>19-41 |             |             |             |             |             | 7<br>0-14     |
| 8 X 20    |            |          |             | 0           | 2.5<br>0-5  |             |             | 80<br>70-90 |             |             |             |             | 17.5<br>10-25 |
| 16 X 0    |            |          |             |             | 0           |             | 4<br>0-8    | 13<br>5-21  | 31<br>18-44 | 36<br>24-48 |             |             | 16<br>4-28    |
| 20 X 0    |            |          |             |             |             | 0           |             | 3<br>0-6    | 44<br>32-56 | 40<br>28-52 |             |             | 13<br>5-21    |
| 100 X 0   |            |          |             |             |             |             |             |             | Tr.         |             | 40<br>32-48 |             | 60<br>52-68   |
| 200 X 0   |            |          |             |             |             |             |             |             | Tr.         |             | 25<br>15-35 |             | 75<br>65-85   |
| 325 X 0   |            |          |             |             |             |             |             |             | Tr.         |             |             | 25<br>15-35 | 75<br>65-85   |

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