

GRAYSTAR LLC

Ceramic Minerals and Specialty Materials

Sales Office
8500 Sheridan Dr
Williamsville, NY 14221
Phone: 716-633-0077
Fax: 716-633-0099
Quality Manager: rprevite@graystarllc.com

Headquarters
9 Simmonsville Rd
PO Box 1670
Bluffton, SC 29910
Phone: 843-815-5600
Fax: 843-815-5601

Blasting Grade Product Data Sheet

Average Chemical Composition (Typical)

| | |
|--------------------------------|-----|
| SiO ₂ * | 36% |
| Al ₂ O ₃ | 20% |
| FeO | 30% |
| Fe ₂ O ₃ | 2% |
| TiO ₂ | 1% |
| MnO | 1% |
| CaO | 2% |
| MgO | 6% |

* Refers to SiO₂ bound within the lattice of the homogeneous garnet crystal (no free silica)

Physical Characteristics (Typical)

| | |
|-------------------------|---------------------|
| Bulk Density | 2.3T/m ³ |
| Specific Gravity | 4.1 |
| Hardness (moh) | 7.50-8.0 |
| Melting Point | 1250°C |
| Shape of natural grains | sub-angular |

Other Characteristics (Typical)

| | |
|---------------------|-----------------------------------|
| Conductivity | 10-15ms/m (max 25ms/m) |
| Radioactivity | ..Not detectable above background |
| Moisture Absorption | Non-hygroscopic, Inert |
| Total Chlorides | 10-15ppm (max 25ppm) |
| Ferrite (free iron) | less than 0.01%* |
| Lead | less than 0.002%* |
| Copper | less than 0.005%* |
| Other Heavy Metals | less than 0.01%* |
| Sulphur | less than 0.01%* |

* Generally below detectable levels.

Mineral Composition (Typical)

| | |
|----------------------|--------|
| Garnet (Almandite) | 97-98% |
| Ilmenite | 1-2% |
| Zircon | 0.20% |
| Quartz (free silica) | <0.5% |
| Others | 0.25% |

Blast Grade Product Range

| Typical Results | New-Steel | Speed-Blast | Premium-Blast |
|--------------------------------------|-----------|-------------|---------------|
| Profile (microns) | 45-55 | 50-70 | 50-85 |
| Consumption (kg/m ²) | 7-10 | 8-10 | 10-12 |
| Cleaning Rate (m ² /hour) | 20-25 | 15-25 | 15-20 |

Standard Packing

- * 80 x 25kg multilayer paper bags shrinkwrapped to 2 MT pallets, or
- * 80 x 25kg multilayer paper bags packed into 2 T bulk bags or
- * 2,000kg top and bottom spouted bulk bags with internal PVC liner, or
- * Loose bulk.

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Waterjet Cutting Grade Product Data Sheet

Average Chemical Composition (Typical)

| | |
|--------------------------------|-----|
| SiO ₂ * | 36% |
| Al ₂ O ₃ | 20% |
| FeO | 30% |
| Fe ₂ O ₃ | 2% |
| TiO ₂ | 1% |
| MnO | 1% |
| CaO | 2% |
| MgO | 6% |

* Refers to SiO₂ bound within the lattice of the homogeneous garnet crystal (no free silica)

Physical Characteristics (Typical)

| | |
|-------------------------|---------------------|
| Bulk Density | 2.3T/m ³ |
| Specific Gravity | 4.1 |
| Hardness (moh) | 7.50-8.0 |
| Melting Point | 1250°C |
| Shape of natural grains | sub-angular |

Other Characteristics (Typical)

| | |
|---------------------|-----------------------------------|
| Conductivity | 10-15ms/m (max 25ms/m) |
| Radioactivity | ..Not detectable above background |
| Moisture Absorption | Non-hygroscopic, Inert |
| Total Chlorides | 10-15ppm (max 25ppm) |
| Ferrite (free iron) | less than 0.01%* |
| Lead | less than 0.002%* |
| Copper | less than 0.005%* |
| Other Heavy Metals | less than 0.01%* |
| Sulphur | less than 0.01%* |

* Generally below detectable levels.

Mineral Composition (Typical)

| | |
|----------------------|--------|
| Garnet (Almandite) | 97-98% |
| Ilmenite | 1-2% |
| Zircon | 0.20% |
| Quartz (free silica) | <0.5% |
| Others | 0.25% |

Waterjet Grade Product Range

| | | (typical weight % retained) | | | |
|------|---------|-----------------------------|-----------|-----------|-----------|
| US | | 50 mesh | 60 mesh | 80 mesh | 120 mesh |
| mesh | microns | (600-200) | (400-200) | (300-150) | (200-100) |
| 30 | 600 | - | - | - | - |
| 35 | 500 | 2 | - | - | - |
| 40 | 425 | 14 | 0.2 | - | - |
| 45 | 355 | 45 | 10 | 2 | - |
| 50 | 300 | 85 | 45 | 20 | - |
| 60 | 250 | 96 | 78 | 50 | 0.01 |
| 70 | 212 | 95 | 96 | 85 | 25 |
| 80 | 180 | 99.9 | 99 | 95 | 70 |
| 90 | 150 | - | 99.8 | 99 | 93 |
| 115 | 125 | - | - | - | 99 |
| 150 | 106 | - | - | - | 99.9 |
| 170 | 90 | - | - | - | - |
| pan | -90 | - | - | - | - |

Standard Packing

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- * 80 x 25kg multilayer paper bags packed into 2 T bulk bags or
- * 2,000kg top and bottom spouted bulk bags with internal PVC liner, or
- * Loose bulk.