

CSX Graphite

Technical Data Sheet 5084

Product Overview

Densified prior to graphitization, GRAFSTAR™ CSX graphite is higher in strength and lower in permeability than CS graphite. It is a material for applications requiring higher densities, better mechanical properties, and less porosity than the CS material. CSX graphite has a particularly low ash content which enhances its oxidation resistance.

Applications

- Casting molds and furnace parts for hot metal
- Powder metallurgy
- Boats and trays for sintering applications
- Resistance heating
- Crucibles for melting and alloying
- Quartz processing

Sizes

- 130 - 915 mm (5.125" - 36") diameter rounds
- 305 x 305 - 610 x 610 mm (12" x 12" - 24" x 24")

Typical Properties at Room Temperature*

| Characteristic | Unit | WG | AG | Unit | WG | AG | Unit | WG | AG |
|-----------------------|------------------------------|-------|------|----------------------|------|------|----------------------|------|------|
| Density | lbs/ft ³ | 111 | | g/cm ³ | 1.78 | | g/cm ³ | 1.78 | |
| Maximum Particle Size | inches | 0.030 | | mm | 0.76 | | mm | 0.76 | |
| Specific Resistance | 10 ⁻⁴ Ωin | 2.8 | 3.5 | μΩm | 7.0 | 9.0 | μΩm | 7.0 | 9.0 |
| Flexural Strength | psi | 3480 | 2900 | kg/cm ² | 245 | 204 | MPa | 24 | 20 |
| Young's Modulus | 10 ⁶ psi | 1.59 | 1.20 | kg/mm ² | 1118 | 844 | GPa | 11.0 | 8.3 |
| Tensile Strength | psi | 2755 | 2175 | kg/cm ² | 194 | 153 | MPa | 19 | 15 |
| Compressive Strength | psi | 7974 | 7974 | kg/cm ² | 561 | 561 | MPa | 55 | 55 |
| Permeability | Darcy | 0.02 | 0.02 | Darcy | 0.02 | 0.02 | Darcy | 0.02 | 0.02 |
| Hardness | Rockwell "R" | 93 | | Rockwell "R" | 93 | | Rockwell "R" | 93 | |
| C.T.E. (to 100 °C) | 10 ⁻⁶ /°F | 1.4 | 2.0 | 10 ⁻⁶ /°K | 2.5 | 3.6 | 10 ⁻⁶ /°K | 2.5 | 3.6 |
| Thermal Conductivity | BTU-ft/hr ft ² °F | 98 | 75 | W/mK | 170 | 130 | W/mK | 170 | 130 |
| Ash Content | ppm | 1200 | | ppm | 1200 | | ppm | 1200 | |

Notes:

* Properties listed are typical and cannot be used as accept/reject specifications

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Redefining limits