

Product Description

Kaolite 2200 is designed for temperatures up to 1204°C (2200°F). and has excellent volume stability and good strength. This general purpose, lightweight monolithic has low density, excellent resistance to thermal shock, and low thermal conductivity.

Instructions for using

Casting: Highest strength is obtained with a monolithic refractory by using the least amount of clean mixing water that will allow thorough working of material into place by vibration. A mechanical mixer is required for proper placement (paddle type mortar mixers are best suited). Mix for 6 minutes to achieve a ball-in-hand consistency. Place material within 30 minutes after mixing.

Precautions: Watertight forms must be used when placing material. All porous surfaces that will come in contact with the material must be waterproofed with a suitable coating or membrane. For maximum strength, cure 24 hours under damp conditions before initial heat-up. Keep freshly placed monolithic warm during cold weather, ideally between 16°C and 27°C (60°F and 80°F) until wet curing is completed. New monolithic installations must be heated slowly the first time.

Freshly placed lightweight monolithics are sometimes prone to a deteriorating condition called alkali hydrolysis when they are kept in a non-dried state for a sustained period of time. Under these conditions, the monolithics should be force dried soon after placement to help retard the possible deterioration.

For detailed installation instructions and commissioning schedules, please contact your Morgan Advanced Materials-Thermal Ceramics representative.

| Properties | Kaolite 2200 | |
|---|----------------------|-------|
| Region of Manufacture | Americas | |
| Bond type | Hydraulic | |
| Raw material base | Insulating Aggregate | |
| Method of installation | Cast | |
| Maximum grain size, mm | 6 | |
| Maximum service temperature, °C (°F) | 1204 (2200) | |
| Net material requirement, kg/m ³ (pcf) | 977 (61) | |
| Water addition, % by weight | | |
| | casting by vibrating | 45-53 |
| Packaging in bags, kg (lbs) | 18 (40) | |

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Kaolite[®] 2200 Monolithic

Product Data Sheet



| Properties | | Kaolite 2200 |
|--|---|---------------------|
| Bulk Density, kg/m³ (pcf), ASTM C134 | | |
| | dried 24 hours @ 105°C (220°F) | 977-1153 (61-72) |
| | fired 5 hours @ 816°C (1500°F) | 881-1057 (55-66) |
| Modulus of Rupture, MPa (psi), ASTM C133 | | |
| | dried 24 hours @ 105°C (220°F) | 0.62-1.21 (90-175) |
| | fired 5 hours @ 816°C (1500°F) | 0.69-1.55 (100-225) |
| | fired 5 hours @ maximum service temperature °C (°F) | 0.55-1.10 (80-160) |
| Cold Crushing Strength, MPa (psi), ASTM C133 | | |
| | dried 24 hours @ 105°C (220°F) | 2.41-5.17 (350-750) |
| | fired 5 hours @ 816°C (1500°F) | 2.41-5.52 (350-800) |
| | fired 5 hours @ maximum service temperature °C (°F) | 3.10-6.21 (450-900) |
| Permanent Linear Change, %, ASTM C113 | | |
| | dried 24 hours @ 105°C (220°F) | 0 to -0.2 |
| | fired 5 hours @ 816°C (1500°F) | -0.2 to -0.55 |
| | fired 5 hours @ maximum service temperature °C (°F) | -0.3 to -1.0 |
| Chemical Analysis, %, Calcined Basis | | |
| | Alumina, Al ₂ O ₃ | 37 |
| | Silica, SiO ₂ | 38 |
| | Ferric Oxide, Fe ₂ O ₃ | 2.2 |
| | Titanium Oxide, TiO ₂ | 1.5 |
| | Calcium Oxide, CaO | 19 (12) |
| | Magnesium Oxide, MgO | 0.2 |
| | Alkali as, K ₂ O+Na ₂ O | 1.2 |
| Thermal Conductivity, W.m•K (BTU•in/hr•ft²•°F) , ASTM C417 | | |
| | 260°C (500°F) | 0.21 (1.48) |
| | 538°C (1000°F) | 0.23 (1.63) |
| | 816°C (1500°F) | 0.26 (1.79) |
| | 1093°C (2000°F) | 0.28 (1.96) |
| Chemical Analysis % for CaO in parentheses indicates the % of reactive CaO present if less than the total. The balance is Calcia from the anorthite aggregate. | | |

Storage and Shelf Life

- Monolithics should be stored in a dry, well-ventilated area and held off the ground on pallets ideally with the original packaging intact. Keep out of rain and damp conditions.
- Normal shelf life is 12 months from date of manufacture when properly stored.

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