

## Product Description

Kaolite 2000 is a general purpose, lightweight monolithic for use up to 1093°C (2000°F). Kaolite 2000 is a cast/gun material for use where low thermal conductivity is required.

## 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 3 minutes to achieve a ball-in-hand consistency. Place material within 30 minutes after mixing.

**Gunning:** Use suitable gunite equipment. To reduce rebound and dust pre-dampen material uniformly with approximately 10-14% by weight clean water in mechanical mixer before placing into gun. Add required water at nozzle for effective placement. Suggested air pressure at the nozzle is between 1.25 and 1.8 bar (18 and 25 psi).

**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.

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

Properties	Kaolite 2000	
Region of Manufacture	Americas	
Bond type	Hydraulic	
Raw material base	Vermiculite	
Method of installation	Cast/Gun	
Maximum grain size, mm	3	
Maximum service temperature, °C (°F)	1093 (2000)	
Net material requirement, kg/m <sup>3</sup> (pcf)	513 (32)	
Water addition, % by weight		
	casting by vibrating	110-125
Packaging in bags, kg (lbs)	11 (25)	

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# Kaolite<sup>®</sup> 2000 Monolithic

## Product Data Sheet



Properties		Kaolite 2000
<b>Bulk Density, kg/m<sup>3</sup> (pcf), ASTM C134</b>		
	dried 24 hours @ 105°C (220°F)	496-657 (31-41)
	fired 5 hours @ 816°C (1500°F)	432-577 (27-36)
<b>Modulus of Rupture, MPa (psi), ASTM C133</b>		
	dried 24 hours @ 105°C (220°F)	0.34-0.62 (50-90)
	fired 5 hours @ 816°C (1500°F)	0.38-0.69 (55-100)
	fired 5 hours @ maximum service temperature °C (°F)	0.41-0.69 (60-100)
<b>Cold Crushing Strength, MPa (psi), ASTM C133</b>		
	dried 24 hours @ 105°C (220°F)	0.65-1.24 (95-180)
	fired 5 hours @ 816°C (1500°F)	0.69-1.28 (100-185)
	fired 5 hours @ maximum service temperature °C (°F)	0.69-1.38 (100-200)
<b>Permanent Linear Change, %, ASTM C113</b>		
	dried 24 hours @ 105°C (220°F)	0 to -0.3
	fired 5 hours @ 816°C (1500°F)	-0.6 to -1.5
	fired 5 hours @ maximum service temperature °C (°F)	-1.5 to -2.5
<b>Chemical Analysis, %, Calcined Basis</b>		
	Alumina, Al <sub>2</sub> O <sub>3</sub>	33
	Silica, SiO <sub>2</sub>	35
	Ferric Oxide, Fe <sub>2</sub> O <sub>3</sub>	4.0
	Titanium Oxide, TiO <sub>2</sub>	1.7
	Calcium Oxide, CaO	18
	Magnesium Oxide, MgO	4.6
	Alkali as, K <sub>2</sub> O+Na <sub>2</sub> O	3.1
<b>Thermal Conductivity, W.m•K (BTU•in/hr•ft<sup>2</sup>•°F), ASTM C417</b>		
	260°C (500°F)	0.11 (0.75)
	538°C (1000°F)	0.13 (0.90)
	816°C (1500°F)	0.14 (0.98)

### 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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