

Product Description

Kaolite 3000 Cast is a lightweight 60% alumina insulating castable for use up to 1650°C (3000°F) that is specifically designed for casting. This mix utilizes a high-purity calcium- aluminate cement that is specifically chosen for its casting characteristics. A gun version is also available.

Instructions for using

Casting: Highest strength is obtained with castable refractory by using the least amount of clean mixing water which will allow thorough working of material into place with a vibrator. A mechanical mixer is required for proper placement (paddle type mortar mixers are best suited). After adding the recommended amount of water mix for 3 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.

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

Properties	Kaolite 3000
Region of Manufacture	Americas
Bond type	Hydraulic
Raw material base	Mullite
Method of installation	Cast
Maximum grain size, mm	8
Maximum service temperature, °C (°F)	1649 (3000)
Net material requirement, kg/m ³ (pcf)	1634 (102)
Water addition, % by weight	
	casting by vibrating
	14-20
Packaging in bags, kg (lbs)	22 (50)

Whilst the values and application information in this datasheet are typical, they are given for guidance only. The values and the information given are subject to normal manufacturing variation and may be subject to change without notice. Morgan Advanced Materials – Thermal Ceramics makes no guarantees and gives no warranties about the suitability of a product and you should seek advice to confirm the product's suitability for use with Morgan Advanced Materials - Thermal Ceramics.

Kaolite[®] 3000 Cast Monolithic

Product Data Sheet



Properties		Kaolite 3000
Bulk Density, kg/m³ (pcf), ASTM C134		
	fired 5 hours @ 816°C (1500°F)	1570-1778 (98-111)
Modulus of Rupture, MPa (psi), ASTM C133		
	dried 24 hours @ 105°C (220°F)	1.72-3.79 (250-550)
	fired 5 hours @ 816°C (1500°F)	1.21-2.41 (175-350)
	fired 5 hours @ maximum service temperature °C (°F)	2.76-5.52 (400-800)
Cold Crushing Strength, MPa (psi), ASTM C133		
	dried 24 hours @ 105°C (220°F)	6.21-11.72 (900-1700)
	fired 5 hours @ 816°C (1500°F)	5.52-10.34 (800-1500)
	fired 5 hours @ maximum service temperature °C (°F)	8.28-15.17 (1200-2200)
Permanent Linear Change, %, ASTM C113		
	dried 24 hours @ 105°C (220°F)	0 to -0.2
	fired 5 hours @ 816°C (1500°F)	-0.1 to -0.3
	fired 5 hours @ maximum service temperature °C (°F)	-1.0 to -2.5
Chemical Analysis, %, Calcined Basis		
	Alumina, Al ₂ O ₃	57
	Silica, SiO ₂	35
	Ferric Oxide, Fe ₂ O ₃	1
	Titanium Oxide, TiO ₂	2
	Calcium Oxide, CaO	4.5
	Magnesium Oxide, MgO	0.2
	Alkali as, K ₂ O+Na ₂ O	0.8
Thermal Conductivity, W.m•K (BTU•in/hr•ft²•°F) , ASTM C417		
	260°C (500°F)	0.52 (3.6)
	538°C (1000°F)	0.55 (3.8)
	816°C (1500°F)	0.58 (4.0)
	1093°C (2000°F)	0.62 (4.3)
	1370°C (2500°F)	0.69 (4.8)

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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