

Product Description

Kaocast is a 68% alumina cast/gun refractory monolithic capable of withstanding up to 1650°C (3000°F).

Instructions for Using

Casting: Highest strength is obtained with 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). After adding the recommended amount of water, wet mix for 3 minutes. Place material within 30 minutes after mixing.

Gunning: Use suitable gunite equipment. Material should be pre-dampened uniformly with approximately 2-4% by weight of clean water in a mechanical mixer before placing into gun. This will reduce rebound and dust. Add required water at nozzle for effective placement. Suggested air pressure at the nozzle is 2.5 to 3.5 bar (35 to 50 psi).

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 in a damp condition 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 complete. 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	Kaocast	
Region of Manufacture	Americas	
Bond type	Hydraulic	
Raw material base	Mullite	
Method of installation	Cast/Gun	
Maximum grain size, mm	6	
Maximum service temperature, °C (°F)	1649 (3000)	
Net material requirement, kg/m ³ (pcf)	2050 (128)	
Water addition, % by weight		
	casting by vibrating	12-14
Packaging in bags, kg (lbs)	25 (55)	

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.

Kaocast™ Monolithic

Product Data Sheet



Properties	Kaocast
Bulk Density, kg/m³ (pcf), ASTM C134	
fired 5 hours @ 816°C (1500°F)	1970-2147 (123-134)
Modulus of Rupture, MPa (psi), ASTM C133	
dried 24 hours @ 105°C (220°F)	3.4-6.9 (500-1000)
fired 5 hours @ 816°C (1500°F)	1.9-3.4 (275-500)
fired 5 hours @ maximum service temperature °C (°F)	3.4-6.2 (500-900)
Cold Crushing Strength, MPa (psi), ASTM C133	
dried 24 hours @ 105°C (220°F)	14.5-24.1 (2100-3500)
fired 5 hours @ 816°C (1500°F)	12.4-20.7 (1800-3000)
fired 5 hours @ maximum service temperature °C (°F)	13.8-27.6 (2000-4000)
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)	-0.2 to -1.0
Chemical Analysis, %, Calcined Basis	
Alumina, Al ₂ O ₃	68
Silica, SiO ₂	24
Iron Oxide, Fe ₂ O ₃	1.0
Titania, TiO ₂	2.3
Lime, CaO	4.7
Alkali as, Na ₂ O + K ₂ O	0.2
Thermal Conductivity, W.m•K (BTU•in/hr•ft²•°F), ASTM C417	
260°C (500°F)	1.17 (8.1)
538°C (1000°F)	1.12 (7.8)
816°C (1500°F)	1.11 (7.7)

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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