

Product Description

Kaolite 2500HS is a medium weight, economical insulating monolithic for use up to 1371°C (2500°F) where high strength and good thermal stability are 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 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 2500HS
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)	1371 (2500)
Net material requirement, kg/m ³ (pcf)	1330 (83)
Water addition, % by weight	
	casting by vibrating
	29-35
Packaging in bags, kg (lbs)	22 (50)

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Kaolite[®] 2500HS Monolithic

Product Data Sheet



Properties	Kaolite 2500HS	
Bulk Density, kg/m³ (pcf), ASTM C134	dried 24 hours @ 105°C (220°F)	1394-1570 (87-98)
	fired 5 hours @ 816°C (1500°F)	1265-1425 (79-89)
Modulus of Rupture, MPa (psi), ASTM C133	dried 24 hours @ 105°C (220°F)	1.72-2.76 (250-400)
	fired 5 hours @ 816°C (1500°F)	1.55-2.59 (225-375)
	fired 5 hours @ maximum service temperature °C (°F)	2.07-3.79 (300-550)
Cold Crushing Strength, MPa (psi), ASTM C133	dried 24 hours @ 105°C (220°F)	6.21-10.34 (900-1500)
	fired 5 hours @ 816°C (1500°F)	5.66-11.03 (850-1600)
	fired 5 hours @ maximum service temperature °C (°F)	6.21-10.34 (900-1500)
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 -0.4
	fired 5 hours @ maximum service temperature °C (°F)	-1.5 to +1.5
Chemical Analysis, %, Calcined Basis	Alumina, Al ₂ O ₃	43
	Silica, SiO ₂	35
	Ferric Oxide, Fe ₂ O ₃	2.2
	Titanium Oxide, TiO ₂	1.6
	Calcium Oxide, CaO	17 (12)
	Magnesium Oxide, MgO	0.2
	Alkali as, K ₂ O+Na ₂ O	0.7
Thermal Conductivity, W.m•K (BTU•in/hr•ft²•°F) , ASTM C417	260°C (500°F)	0.40 (2.8)
	538°C (1000°F)	0.43 (3.0)
	816°C (1500°F)	0.46 (3.2)
	1093°C (2000°F)	0.51 (3.4)
	1370°C (2500°F)	0.53 (3.5)
Chemical Analysis % for CaO in parentheses indicates the % of reactive CaO present if less than the total. The balance is CaO 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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