Kao-Tab™ SR Monolithic

Product Data Sheet

Product Description

Kao-Tab SR is a special application 88%-alumina monolithic designed for gunning or hand ramming. It maintains high strength throughout the temperature range of 1649°C (3000°F). Key features are high strength and excellent slag resistance (both basic and acidic types).

Instructions for Using

Gunning: Use suitable gunite equipment. To reduce rebound and dust, material should first be pre-dampened uniformly with approximately 2-4% by weight of clean water in a mechanical mixer. Dampened material may need to slake for 10-15 minutes depending on ambient temperature conditions before placing into gun. 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).

Kao-Tab SR can be hand rammed or plastered into place by adding a sufficient amount of water for proper consistency. Typical water content for hand ramming is 5-8% by weight. Wet mix for 3-6 minutes to ahceive the desired consistency.

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 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). 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	Kao-Tab SR
Region of Manufacture	Americas
Bond type	Hydraulic
Raw material base	Tabular Alumina
Method of installation	Gun/Hand Ram
Maximum grain size, mm	4
Maximum service temperature, °C (°F)	1649 (3000)
Net material requirement, kg/m^3 (pcf)	2643 (165)
Water addition, % by weight	
ramming	6-8
Packaging in bags, kg (lbs)	25 (55)

www.morganthermalceramics.com
Email: marketing.tc@morganplc.com
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Properties	Kao-Tab SR
Bulk Density, kg/m^3 (pcf), ASTM C134	
fired 5 hours @ 816°C (1500°F)	2563-2723 (160-170)
Modulus of Rupture, MPa (psi), ASTM C133	
dried 24 hours @ 105°C (220°F)	6.9-9.7 (1000-1400)
fired 5 hours @ 816°C (1500°F)	6.2-10.3 (900-1500)
fired 5 hours @ maximum service temperature °C (°F)	8.3-15.2 (1200-2200)
Cold Crushing Strength, MPa (psi), ASTM C133	
dried 24 hours @ 105°C (220°F)	34.5-62.1 (5000-9000)
fired 5 hours @ 816°C (1500°F)	37.9-58.6 (5500-8500)
fired 5 hours @ maximum service temperature °C (°F)	41.4-62.1 (6000-9000)
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
Abrasion loss, cm^3, ASTM C704	
fired 5 hours @ 816°C (1500°F)	7-14
Chemical Analysis, %, Calcined Basis	
Alumina, Al_2O_3	88
Silica, SiO_2	0.2
Iron Oxide, Fe_2O_3	7.1
Lime, CaO	4.2
Alkali as, $Na_2O + K_2O$	0.4
Thermal Conductivity, W.m•K (BTU•in/hr•ft^2•°F) , ASTM C417	
260°C (500°F)	1.83 (12.7)
538°C (1000°F)	1.67 (11.6)
816°C (1500°F)	1.59 (11.0)
1093°C (2000°F)	1.40 (9.7)
1370°C (2500°F)	1.33 (9.2)

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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