

Product Description

Kaolite 3300 is a high strength bubble alumina, lightweight castable with a high-purity binder. Kaolite 3300 is recommended for transfer lines to secondary ammonia reformers, and other applications where resistance to hydrogen atmospheres and silica pickup is critical.

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 castable warm during cold weather, ideally between 16°C to 27°C (60°F and 80°F) until wet curing is complete. New castable 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 3300 |
|---|----------------------|
| Region of Manufacture | Americas |
| Bond type | Hydraulic |
| Raw material base | Bubble Alumina |
| Method of installation | Cast |
| Maximum grain size, mm | 6 |
| Maximum service temperature, °C (°F) | 1816 (3300) |
| Net material requirement, kg/m ³ (pcf) | 1570 (98) |
| Water addition, % by weight | |
| | casting by vibrating |
| | 11-13 |
| 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[®] 3300 Monolithic

Product Data Sheet



| Properties | | Kaolite 3300 |
|--|---|-------------------------|
| Bulk Density, kg/m³ (pcf), ASTM C134 | | |
| | fired 5 hours @ 816°C (1500°F) | 1505-1682 (94-105) |
| Modulus of Rupture, MPa (psi), ASTM C133 | | |
| | dried 24 hours @ 105°C (220°F) | 2.76-5.52 (400-800) |
| | fired 5 hours @ 816°C (1500°F) | 2.41-4.14 (350-600) |
| | fired 5 hours @ maximum service temperature °C (°F) | 6.21-11.72 (900-1700) |
| Cold Crushing Strength, MPa (psi), ASTM C133 | | |
| | dried 24 hours @ 105°C (220°F) | 13.79-24.14 (2000-3500) |
| | fired 5 hours @ 816°C (1500°F) | 10.34-20.69 (1500-3000) |
| | fired 5 hours @ maximum service temperature °C (°F) | 17.24-27.59 (2500-4000) |
| 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 to -0.6 |
| Chemical Analysis, %, Calcined Basis | | |
| | Alumina, Al ₂ O ₃ | 94 |
| | Silica, SiO ₂ | 0.5 |
| | Ferric Oxide, Fe ₂ O ₃ | 0.1 |
| | Titanium Oxide, TiO ₂ | - |
| | Calcium Oxide, CaO | 4.6 |
| | Magnesium Oxide, MgO | 0.1 |
| | Alkali as, K ₂ O+Na ₂ O | 0.4 |
| Thermal Conductivity, W.m•K (BTU•in/hr•ft²•°F) , ASTM C417 | | |
| | 260°C (500°F) | 1.43 (9.9) |
| | 538°C (1000°F) | 1.18 (8.2) |
| | 816°C (1500°F) | 1.07 (7.4) |
| | 1093°C (2000°F) | 1.08 (7.5) |
| | 1370°C (2500°F) | 1.15 (8.0) |

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.

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.