

### Product Description

Kaolite 2300LI AHR is a low iron, lightweight monolithic with a special formulation to prevent alkali hydrolysis.

### 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). Mix for 3-6 minutes to achieve a good ball-in-hand consistency. Place material within 20 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 installation 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 2300LI AHR   |
|---------------------------------------------------|----------------------|
| 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)              | 1260 (2300)          |
| Net material requirement, kg/m <sup>3</sup> (pcf) | 1009 (63)            |
| Water addition, % by weight                       |                      |
|                                                   | casting by vibrating |
|                                                   | 42-47                |
| Packaging in bags, kg (lbs)                       | 18 (40)              |

The product(s) represented are intended for industrial refractory applications. The values and application information in this datasheet 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.

# Kaolite® 2300 LI AHR

## Monolithic

### Product Data Sheet



| Properties                                                                                                                                                  |                                                     | Kaolite 2300LI AHR     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|------------------------|
| <b>Bulk Density, kg/m<sup>3</sup> (pcf), ASTM C134</b>                                                                                                      |                                                     |                        |
|                                                                                                                                                             | dried 24 hours @ 105°C (220°F)                      | 993-1169 (62-73)       |
|                                                                                                                                                             | fired 5 hours @ 816°C (1500°F)                      | 881-1121 (55-70)       |
| <b>Modulus of Rupture, MPa (psi), ASTM C133</b>                                                                                                             |                                                     |                        |
|                                                                                                                                                             | dried 24 hours @ 105°C (220°F)                      | 1.38-2.76 (200-400)    |
|                                                                                                                                                             | fired 5 hours @ 816°C (1500°F)                      | 1.03-1.52 (150-220)    |
|                                                                                                                                                             | fired 5 hours @ maximum service temperature °C (°F) | 1.38-2.41 (200-350)    |
| <b>Cold Crushing Strength, MPa (psi), ASTM C133</b>                                                                                                         |                                                     |                        |
|                                                                                                                                                             | dried 24 hours @ 105°C (220°F)                      | 6.89-10.34 (1000-1500) |
|                                                                                                                                                             | fired 5 hours @ 816°C (1500°F)                      | 3.45-6.90 (500-1000)   |
|                                                                                                                                                             | fired 5 hours @ maximum service temperature °C (°F) | 4.83-10.34 (700-1500)  |
| <b>Permanent Linear Change, %, ASTM C113</b>                                                                                                                |                                                     |                        |
|                                                                                                                                                             | dried 24 hours @ 105°C (220°F)                      | 0 to -0.2              |
|                                                                                                                                                             | fired 5 hours @ 816°C (1500°F)                      | -0.1 to -0.6           |
|                                                                                                                                                             | fired 5 hours @ maximum service temperature °C (°F) | -1.0 to -2.0           |
| <b>Chemical Analysis, %, Calcined Basis</b>                                                                                                                 |                                                     |                        |
|                                                                                                                                                             | Alumina, Al <sub>2</sub> O <sub>3</sub>             | 40                     |
|                                                                                                                                                             | Silica, SiO <sub>2</sub>                            | 44                     |
|                                                                                                                                                             | Ferric Oxide, Fe <sub>2</sub> O <sub>3</sub>        | 0.4                    |
|                                                                                                                                                             | Titanium Oxide, TiO <sub>2</sub>                    | 0.8                    |
|                                                                                                                                                             | Calcium Oxide, CaO                                  | 12 (4)                 |
|                                                                                                                                                             | Magnesium Oxide, MgO                                | 0.2                    |
|                                                                                                                                                             | Alkali as, K <sub>2</sub> O+Na <sub>2</sub> O       | 1.2                    |
| <b>Thermal Conductivity, W.m•K (BTU•in/hr•ft<sup>2</sup>•°F) , ASTM C417</b>                                                                                |                                                     |                        |
|                                                                                                                                                             | 260°C (500°F)                                       | 0.28 (1.96)            |
|                                                                                                                                                             | 538°C (1000°F)                                      | 0.29 (2.01)            |
|                                                                                                                                                             | 816°C (1500°F)                                      | 0.31 (2.15)            |
|                                                                                                                                                             | 1093°C (2000°F)                                     | 0.32 (2.23)            |
| 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 9 months from date of manufacture when properly stored.

The product(s) represented are intended for industrial refractory applications. The values and application information in this datasheet 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.