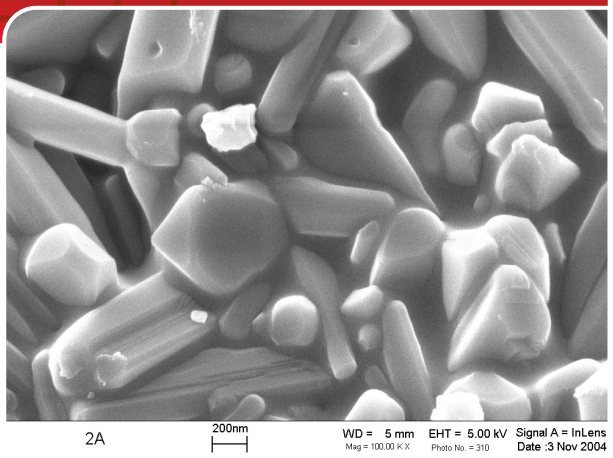
VIRGINIA MULLITE

$3Al_2O_3.2SiO_2$

Purity • Consistent Quality • Abundant Supply • Expert Customer Service



What is Mullite?

Mullite rarely occurs as a mineral in nature. In fact, the word mullite is derived from the Isle of Mull off the English coast, where the only naturally occurring deposits of mullite have ever been found. Mullite is a mineral with a very high melting temperature of 1840° C. It is a premier acidic refractory mineral; it has no polymorphic inversions and possesses a low thermal expansion coefficient of 5.3 x 10^{-6}/° C. Moreover when mullite re-crystallizes in a ceramic or a refractory it forms as small lenticular crystals which promote high strength, even at very high temperatures. Mullite is a key ingredient in many high temperature products.

Calcined Kyanite

Virginia Kyanite™ is converted to mullite by calcining it in excess of 1450° C in a rotary kiln. The resulting product, called Virginia Mullite™, contains about 80% mullite, 11% finely dispersed amorphous silica, 7% quartz, and about 2% cristobalite. Virginia Mullite is different in particle shape and impurities than mullite formed by calcining clay minerals. Virginia mullite contains 54-60% alumina.

Properties of Mullite

Mullite is a very important refractory material with high melting temperature, high hot strength, and excellent thermal shock resistant and high creep resistance. It is volume stable at very high temperatures and has a low coefficient of thermal expansion. It has excellent electrical insulation properties. It has outstanding hot load-bearing properties, and it is resistant to many corrosive environments.

Uses

Virginia mullite is a key ingredient in many refractory, ceramics, foundry and electrical insulators. Mullite is used in sanitary ware for providing excellent strength to the body and volume stability, and is also used in brake shoe linings. Virginia Mullite is widely used in foundries as refractory coatings for various metal castings. It provides excellent protection of metal as well as process. Virginia Mullite grains and flours are used in investment casting shells where high hot strength is desired.

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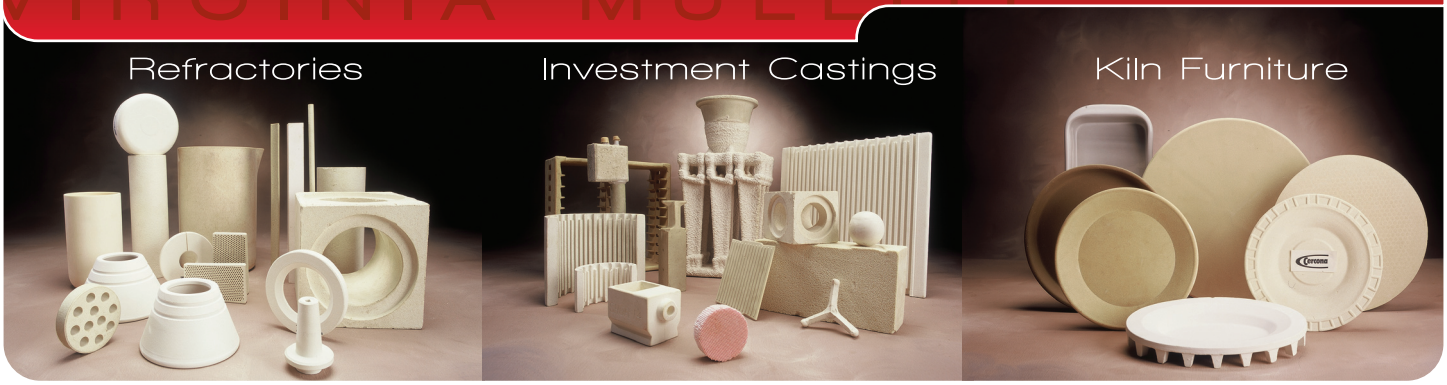
Direct Sales 434.983.2043 www.kyanite.com Direct Sales Fax 434.983.3579

VIRGINIA MULLITE SPECIFICATIONS



Typical Chemical Analysis (%)

Al_2O_3	56.9 (54.0 min)
SiO_2	39.9
TiO_2	1.3
Fe_2O_3	0.6 (1.0 max)
CaO	<0.04
MgO	<0.24
Na_2O	<0.04
K_2O	<0.07
P_2O_5	<0.15

Mineralogy (%)

Mullite	76-82
Amorphous	8-12
Quartz/Cristobalite	5-10

Screen Analysis Specification of Virginia Mullite

	35m (500 microns)	48m (300 microns)	100m (150 microns)	150m (106 microns)	200m (75 microns)	325m (45 microns)	Pan
35 Mesh	15-25	15-30	30-50				10-30
48 Mesh		4-10	10-25	10-20	10-20		35-55
100 Mesh			5-10	5-15	10-18		60-77
200 Mesh					10 max		90 min
325 Mesh						10 max	90 min

Screen analysis is reported on Tyler standerd sieves. Pan designates material passing the last reported screeen. All analysis are expressed in weight %.

VIRGINIA K MULLITE