

KAST-O-LITE® 22 PLUS



Product Data

3/16: 5153

Description: 2200°F Insulating Refractory Castable

- Features:
- Lightweight castable with low thermal conductivity and good strength.
- Uses:
- Oil stills and heaters.
 - Lightweight panel construction.
 - Flue and duct linings, complete monolithic linings.
 - Backup material.

Chemical Analysis: Approximate (Calcined Basis)

Silica (SiO ₂)	36.8%
Alumina (Al ₂ O ₃)	37.2%
Iron Oxide (Fe ₂ O ₃)	4.2%
Titania (TiO ₂)	1.8%
Lime (CaO)	17.4%
Magnesia (MgO)	0.4%
Alkalies (Na ₂ O+K ₂ O)	2.2%

Physical Data (Typical)

Maximum Service Temperature	2200°F (1205°C)
Material Required	56 lb/ft ³ (0.90 g/cm ³)
Bulk Density	lb/ft ³ (g/cm ³)
After 220°F (105°C)	60 (0.96)
After 1500°F (815°C)	52 to 62 (0.83 to 0.99)
Modulus of Rupture	lb/in. ² (MPa)
After 220°F (105°C)	210 (1.45)
After 1000°F (540°C)	50 to 150 (0.34 to 1.00)
After 1500°F (815°C)	55 to 160 (0.38 to 1.10)
After 2000°F (1095°C)	30 to 150 (0.21 to 1.03)
Cold Crushing Strength	lb/in. ² (MPa)
After 220°F (105°C)	375 to 700 (2.58 to 4.83)
After 1000°F (540°C)	225 to 600 (1.55 to 4.14)
After 1500°F (815°C)	450 to 850 (3.10 to 5.86)
After 2000°F (1095°C)	110 to 425 (0.76 to 2.93)
Permanent Linear Change	
After 220°F (105°C)	None
After 1000°F (540°C)	-0.2 to -0.7%
After 1500°F (815°C)	-0.3 to -0.8%
After 2000°F (1095°C)	-0.8 to -1.5%
After 2100°F (1150°C)	-0.8 to -1.5%
Thermal Conductivity	Btu·in/hr·ft ² ·°F (W/m·°C)
At 400°F (205°C)	1.70 (0.25)
At 800°F (425°C)	1.80 (0.26)
At 1200°F (650°C)	1.98 (0.29)
At 1600°F (870°C)	2.26 (0.33)

Product Data

Particle Size

Maximum Grain Size 10 Mesh (Tyler)

Less than 3%

Note: The test data shown are based on average results on production samples and are subject to normal variation on individual tests. The test data cannot be taken as minimum or maximum values for specification purposes. ASTM test procedures used when applicable.

Mixing and Using Information (Water calculated at 8.337 lb/gallon)	55 lb bag	1000 lb bag	1500 lb bag
Water Required—Hand Casting (Weight 50.0%)			
Pounds	27.5	500.0	750.0
Gallons	3.3	60.0	90.0
Liters	12.5	226.6	339.9

For detailed mixing and using instructions, contact your HWI representative or visit www.thinkHWI.com.

Mixing Time: Typically two (2) minutes at most is best, but not more than three (3) minutes. Add 70-80% of water to mixer before adding dry material.

Heatup/Dryout Schedule

See HWI Dryout Schedule 4—PLUS Rated Lightweight Castables and Gunning Castables.

Installation Guidelines

See HWI Installation Guidelines IC-1—Insulating Castables—Standard.

Shelf Life (Under Proper Storage Conditions)

365 days