

KS-4® PLUS



Product Data

1/12: 5897

Description: Dense, Strong, General-Purpose Castable Refractory for Temperatures up to 2550°F

- Features:
- Good strength.
- Uses:
- Complete furnace linings.
 - Pouring special shapes.
 - Ideal general-purpose castable.

Chemical Analysis: Approximate (Calcined Basis)

Silica (SiO ₂)	42.6%
Alumina (Al ₂ O ₃)	44.9%
Iron Oxide (Fe ₂ O ₃)	2.3%
Titania (TiO ₂)	2.3%
Lime (CaO)	6.7%
Magnesia (MgO)	0.3%
Alkalies (Na ₂ O+K ₂ O)	0.9%

Physical Data (Typical)

	Poured
Maximum Service Temperature	2550°F (1400°C)
Material Required	122 lb/ft ³ (1.96 g/cm ³)
Bulk Density	lb/ft ³ (g/cm ³)
After 220°F (105°C)	127 (2.04)
After 1500°F (815°C)	122 (1.96)
Modulus of Rupture	lb/in. ² (MPa)
After 220°F (105°C)	900 (6.3)
After 1000°F (540°C)	600 (4.2)
After 1500°F (815°C)	600 (4.2)
After 2000°F (1095°C)	450 (3.1)
Cold Crushing Strength	lb/in. ² (MPa)
After 220°F (105°C)	4,150 (28.5)
After 1000°F (540°C)	2,650 (18.4)
After 1500°F (815°C)	2,600 (17.9)
After 2000°F (1095°C)	1,700 (11.7)
Permanent Linear Change	
After 220°F (105°C)	None
After 1000°F (540°C)	-0.2%
After 1500°F (815°C)	-0.2%
After 2000°F (1095°C)	-0.3%
After 2300°F (1260°C)	-0.4%
After 2500°F (1370°C)	-0.1%
Thermal Conductivity	Btu·in/hr·ft ² ·°F (W/m·°C)
At 400°F (205°C)	5.99 (0.86)
At 800°F (425°C)	6.02 (0.87)
At 1200°F (650°C)	6.09 (0.88)
At 1600°F (870°C)	6.20 (0.89)
At 2000°F (1095°C)	6.35 (0.92)

Product Data

Particle Size

Maximum Grain Size 5 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—Vibration Casting (Weight 12.7%)			
Pounds	7.0	127.0	190.5
Gallons	0.8	15.2	22.8
Liters	3.2	57.6	83.3
Water Required—Hand Casting/Pouring (Weight 13.5%)			
Pounds	7.4	135.0	202.5
Gallons	0.9	16.2	24.3
Liters	3.4	61.2	91.8

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

Working Time

20 minutes

Heatup/Dryout Schedule

See HWI Dryout Schedule 2—PLUS Rated Castables and Gunning Castables.

Installation Guidelines

See HWI Installation Guidelines CC-1—Conventional Castables—Standard.

Shelf Life (Under Proper Storage Conditions)

365 days