KAST-O-LITE® 30 LI G PLUS



Product Data Ref:166/28/02/13

Description: 1650°C High Alumina, Low Iron, Insulating Gunning Castable.

Features:

- Lightweight with moderate density and excellent strengths.
- Low iron, low thermal conductivity, and low rebound.

Uses:

- Aluminum furnace stacks and aluminium holding furnace doors.
- Reheat furnace discharge doors.
- Petrochemical heaters and air heaters.
- Reheat furnace backup linings, sulphur recovery unit backup linings, catalytic reformer backup linings behind stainless steel shrouds.

Silica - SiO₂ 35.6% Alumina - Al₂O₃ 56.2% Titania - TiO₂ 1.2% Iron Oxide - Fe₂O₃ 0.9% Lime - CaO 5.5% Magnesia - MgO 0.2% Alkalies - Na₂O + K₂O 0.5% Physical Properties Gunned Maximum Recommended Temperature 1650°C Quantity Required 1570 Kgs/m³ Bulk Density Kgs/m³ After Heating at 105°C 1510 - 1700 After Heating at 151°C 1470 - 1630 Modulus of Rupture - ASTM C133 and C 865 MPa After Heating at 105°C 3.10 - 4.80 After Heating at 105°C 3.10 - 4.80 After Heating at 105°C 2.10 - 3.10 After Heating at 105°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 6.90 - 17.20 After Heating at 105°C 0.1% Shr After Heating at 105°C 0.2% Exp - 0.3% Shr After Heating at 105°C 0.2% Exp - 0.3% Shr After Heating at 105°C 0.2% Exp - 0.3% Shr After Heating at 105°C 0.2% Exp - 0.3% Shr After Heating at 105°C 0.55 After Heating at 105°C 0.65 After Heating at 105	Chemical Analysis: Approximate (Calcined Basis)	
Titania - TiO₂ 1.2% Iron Oxide - Fe₂O₃ 0.9% Lime - CaO 5.5% Magnesia - MgO 0.2% Alkalies - Na₂O + K₂O 0.5% Physical Properties Gunned Maximum Recommended Temperature 1650°C Quantity Required 1570 Kgs/m³ Bulk Density Kgs/m³ After Heating at 105°C 1510 - 1700 After Heating at 815°C 1470 - 1630 Modulus of Rupture - ASTM C133 and C 865 MPa After Heating at 105°C 3.10 - 4.80 After Heating at 105°C 1.40 - 3.80 After Heating at 195°C 1.40 - 3.80 After Heating at 195°C 2.10 - 3.10 After Heating at 105°C 9.70 - 20.70 After Heating at 105°C 6.90 - 17.20 After Heating at 105°C 6.90 - 17.20 After Heating at 105°C 6.90 - 17.20 After Heating at 105°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 After Heating at 105°C After Heating at 105°C 0.1% Shr After Heating at 105°C 0.0%	Silica - SiO ₂	35.6%
Iron Oxide - Fe ₂ O ₃	Alumina - Al ₂ O ₃	56.2%
Lime - CaO 5.5% Magnesia - MgO 0.2% Alkalies - Na₂O + K₂O 0.5% Physical Properties Gunned Maximum Recommended Temperature 1650°C Quantity Required 1570 Kgs/m³ Bulk Density Kgs/m³ After Heating at 105°C 1510 - 1700 After Heating at 815°C 1740 - 1630 Modulus of Rupture - ASTM C133 and C865 MPa After Heating at 105°C 3.10 - 4.80 After Heating at 105°C 1.40 - 3.80 After Heating at 105°C 2.10 - 3.10 After Heating at 105°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 9.70 - 20.70 After Heating at 185°C 6.90 - 17.20 After Heating at 185°C 6.90 - 17.20 After Heating at 1370°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 0.2% Exp - 0.3% Shr After Heating at 137°C 0.2% Exp - 0.3% Shr After Heating at 137°C 0.2% Exp - 0.3% Shr After Heating at 137°C 0.0.4% Shr	Titania - TiO ₂	1.2%
Magnesia - MgO 0.2% Alkalies - Na₂O + K₂O 0.5% Physical Properties Gunned Maximum Recommended Temperature 1650°C Quantity Required 1570 Kgs/m³ Bulk Density Kgs/m³ After Heating at 105°C 1510 - 1700 After Heating at 815°C 1470 - 1630 Modulus of Rupture - ASTM C133 and C 865 MPa After Heating at 105°C 3.10 - 4.80 After Heating at 105°C 1.40 - 3.80 After Heating at 1095°C 2.10 - 3.10 After Heating at 1095°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 9.70 - 20.70 After Heating at 105°C 9.70 - 20.70 After Heating at 1095°C 6.90 - 17.20 After Heating at 1095°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 4 After Heating at 105°C 0.1% Shr After Heating at 105°C 0.20 × Exp - 0.3% Shr After Heating at 105°C 0.20 × Exp - 0.5% Shr Thermal Conductivity Wimk	Iron Oxide - Fe ₂ O ₃	0.9%
Alkalies - Nay O + K₂O 0.5% Physical Properties Gunned Maximum Recommended Temperature 1650°C Quantity Required 1570 Kgs/m³ Bulk Density Kgs/m³ After Heating at 105°C 1470 - 1630 Modulus of Rupture - ASTM C133 and C 865 MPa After Heating at 105°C 3.10 - 4.80 After Heating at 105°C 3.10 - 4.80 After Heating at 1095°C 2.10 - 3.10 After Heating at 1370°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 9.70 - 20.70 After Heating at 815°C 6.90 - 17.20 After Heating at 1095°C 6.90 - 17.20 After Heating at 1370°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 0.1% Shr After Heating at 105°C 0.1% Shr After Heating at 105°C 0.2% Exp - 0.3% Shr After Heating at 105°C 0.0% Shr After Heating at 105°C 0.0% Exp After Heating at 105°C 0.0% Shr After Heating at 100°C 0.4% Shr <tr< td=""><td>Lime - CaO</td><td>5.5%</td></tr<>	Lime - CaO	5.5%
Physical Properties Gunned Maximum Recommended Temperature 1650°C Quantity Required 1570 Kgs/m³ Bulk Density Kgs/m³ After Heating at 105°C 1510 - 1700 After Heating at 815°C 1470 - 1630 Modulus of Rupture - ASTM C133 and C 865 MPa After Heating at 105°C 3.10 - 4.80 After Heating at 815°C 1.40 - 3.80 After Heating at 195°C 2.10 - 3.10 After Heating at 105°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 9.70 - 20.70 After Heating at 105°C 6.90 - 17.20 After Heating at 105°C 6.90 - 17.20 After Heating at 105°C 6.90 - 17.20 After Heating at 105°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 Value Colon Colo	Magnesia - MgO	0.2%
Maximum Recommended Temperature 1650°C Quantity Required 1570 Kgs/m³ Bulk Density Kgs/m³ After Heating at 105°C 1510 - 1700 After Heating at 815°C 1470 - 1630 Modulus of Rupture - ASTM C133 and C 865 MPa After Heating at 105°C 3.10 - 4.80 After Heating at 105°C 1.40 - 3.80 After Heating at 1370°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 9.70 - 20.70 After Heating at 105°C 6.90 - 17.20 After Heating at 105°C 6.90 - 17.20 After Heating at 105°C 6.90 - 17.20 After Heating at 1370°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 The Conductivity After Heating at 105°C 0.1% Shr After Heating at 105°C 0.2% Exp - 0.3% Shr After Heating at 105°C 0.0% Shr After Heating at 105°C 0.0% Exp After Heating at 105°C 0.0% Exp After Heating at 105°C 0.0% Exp After Heating at 105°C 0.0% Exp <td>Alkalies - Na₂O + K₂O</td> <td>0.5%</td>	Alkalies - Na ₂ O + K ₂ O	0.5%
Quantity Required 1570 Kgs/m³ Bulk Density Kgs/m³ After Heating at 105°C 1510 - 1700 After Heating at 815°C 1470 - 1630 Modulus of Rupture - ASTM C133 and C 865 MPa After Heating at 815°C 3.10 - 4.80 After Heating at 105°C 1.40 - 3.80 After Heating at 1370°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 9.70 - 20.70 After Heating at 815°C 6.90 - 17.20 After Heating at 105°C 6.90 - 17.20 After Heating at 1370°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 The Reating at 105°C After Heating at 15°C 0.1% Shr After Heating at 105°C 0.1% Shr After Heating at 105°C 0.1% Shr After Heating at 105°C 0.2% Exp - 0.3% Shr After Heating at 105°C 0.0% Exp After Heating at 105°C 0.0% Exp After Heating at 105°C 0.0% Exp After Heating at 160°C 0.0% Exp After Heating at 150°C 0.0% Exp </td <td></td> <td></td>		
Bulk Density Kgs/m³ After Heating at 815°C 1510 - 1700 Modulus of Rupture - ASTM C133 and C 865 MPa After Heating at 105°C 3.10 - 4.80 After Heating at 815°C 1.40 - 3.80 After Heating at 1095°C 2.10 - 3.10 After Heating at 1370°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 9.70 - 20.70 After Heating at 105°C 6.90 - 17.20 After Heating at 105°C 6.90 - 17.20 After Heating at 1370°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 The Heating at 105°C After Heating at 105°C 0.1% Shr After Heating at 105°C 0.2% Exp - 0.3% Shr After Heating at 105°C 0.2% Exp - 0.3% Shr After Heating at 105°C 0.2% Exp - 0.5% Shr After Heating at 105°C 0.0% Exp After Heating at 105°C 0.5% Exp After Heating at 105°C	•	
After Heating at 105°C After Heating at 815°C Modulus of Rupture - ASTM C133 and C 865 Modulus of Rupture - ASTM C133 and C 865 After Heating at 105°C After Heating at 105°C After Heating at 1095°C After Heating at 1095°C After Heating at 1370°C Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 1370°C After Heating at 1095°C After Heating at 1370°C Permanent Linear Change - ASTM C113 and C865 After Heating at 1370°C Permanent Linear Change - ASTM C113 and C865 After Heating at 1095°C After Heating at 1095°C After Heating at 1095°C After Heating at 1095°C After Heating at 1095°C After Heating at 1370°C O 0.0% Exp - 0.3% Shr After Heating at 1370°C After Heating at 1370°C O 0.0.8% Exp After Heating at 1370°C O 0.5% Exp After Heating at 1600°C Thermal Conductivity Wimk At 205°C At 425°C At 425°C At 450°C At 870°C O.58 At 870°C O.65	Quantity Required	
After Heating at 815°C 1470 - 1630 Modulus of Rupture - ASTM C133 and C 865 MPa After Heating at 105°C 3.10 - 4.80 After Heating at 1095°C 2.10 - 3.10 After Heating at 1370°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 9.70 - 20.70 After Heating at 815°C 6.90 - 17.20 After Heating at 1095°C 6.90 - 17.20 After Heating at 1370°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 U.1% Shr After Heating at 105°C 0.1% Shr After Heating at 105°C 0.2% Exp - 0.3% Shr After Heating at 1095°C 0.0 - 0.4% Shr After Heating at 1095°C 0 - 0.8% Exp After Heating at 1600°C 1.8% Exp - 0.5% Shr Thermal Conductivity W/mK At 205°C 0.51 At 425°C 0.51 At 425°C 0.55 At 870°C 0.62 At 1095°C 0.62	Bulk Density	Kgs/m ³
Modulus of Rupture - ASTM C133 and C 865 MPa After Heating at 105°C 3.10 - 4.80 After Heating at 109°C 1.40 - 3.80 After Heating at 109°C 2.10 - 3.10 After Heating at 1370°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 9.70 - 20.70 After Heating at 109°C 6.90 - 17.20 After Heating at 1370°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 8 After Heating at 105°C 0.1% Shr After Heating at 105°C 0.2% Exp - 0.3% Shr After Heating at 1095°C 0.2% Exp - 0.3% Shr After Heating at 1095°C 0 - 0.4% Shr After Heating at 1370°C 0 - 0.8% Exp After Heating at 1600°C 1.8% Exp - 0.5% Shr Thermal Conductivity W/mK At 205°C 0.51 At 425°C 0.55 At 870°C 0.62 At 1095°C 0.62 At 1095°C 0.65	After Heating at 105°C	1510 - 1700
After Heating at 105°C After Heating at 1095°C After Heating at 1095°C After Heating at 1095°C After Heating at 1370°C Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 135°C After Heating at 105°C After Heating at 105°C After Heating at 105°C After Heating at 1095°C After Heating at 1095°C After Heating at 1370°C After Heating at 1370°C Permanent Linear Change - ASTM C113 and C865 After Heating at 105°C After Heating at 105°C O.1% Shr After Heating at 105°C After Heating at 105°C O.2% Exp - 0.3% Shr After Heating at 105°C O.2% Exp - 0.3% Shr After Heating at 105°C After Heating at 105°C O.2% Exp - 0.3% Shr After Heating at 105°C O.2% Exp - 0.3% Shr After Heating at 105°C O.2% Exp - 0.5% Shr Thermal Conductivity W/mK At 205°C At 205°C O.55 At 455°C O.55 At 650°C O.58 At 870°C O.62 At 1095°C	After Heating at 815°C	1470 - 1630
After Heating at 815°C After Heating at 1095°C After Heating at 1370°C After Heating at 1370°C After Heating at 1370°C Cold Crushing Strength - ASTM C133 and C865 After Heating at 105°C After Heating at 815°C After Heating at 815°C After Heating at 1095°C After Heating at 1095°C After Heating at 1370°C Permanent Linear Change - ASTM C113 and C865 After Heating at 105°C After Heating at 105°C After Heating at 815°C After Heating at 815°C After Heating at 105°C O - 0.4% Shr After Heating at 105°C After Heating at 1600°C Thermal Conductivity W/mK At 205°C At 205°C At 650°C At 870°C O.58 At 870°C O.62 At 1095°C	Modulus of Rupture - ASTM C133 and C 865	MPa
After Heating at 1095°C After Heating at 1370°C After Heating at 1370°C Cold Crushing Strength - ASTM C133 and C865 After Heating at 105°C After Heating at 815°C After Heating at 1095°C After Heating at 1095°C After Heating at 1370°C After Heating at 1370°C Permanent Linear Change - ASTM C113 and C865 After Heating at 105°C After Heating at 105°C After Heating at 105°C After Heating at 815°C After Heating at 815°C After Heating at 1095°C After Heating at 1095°C After Heating at 1095°C After Heating at 1370°C After Heating at 1370°C After Heating at 1370°C After Heating at 1095°C After Heating at 1600°C Thermal Conductivity Wimk At 205°C At 205°C At 850°C At 850°C At 870°C At 870°C At 1095°C O.65	After Heating at 105°C	3.10 - 4.80
After Heating at 1370°C 4.14 - 6.90 Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 9.70 - 20.70 After Heating at 1095°C 6.90 - 17.20 After Heating at 1370°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 0.1% Shr After Heating at 105°C 0.1% Shr After Heating at 815°C 0.2% Exp - 0.3% Shr After Heating at 1095°C 0 - 0.4% Shr After Heating at 1370°C 0 - 0.8% Exp After Heating at 1600°C 1.8% Exp - 0.5% Shr Thermal Conductivity W/mK At 205°C 0.51 At 425°C 0.55 At 650°C 0.58 At 870°C 0.62 At 1095°C 0.65	After Heating at 815°C	1.40 - 3.80
Cold Crushing Strength - ASTM C133 and C865 MPa After Heating at 105°C 9.70 - 20.70 After Heating at 815°C 6.90 - 17.20 After Heating at 1095°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 0.1% Shr After Heating at 105°C 0.1% Shr After Heating at 815°C 0.2% Exp - 0.3% Shr After Heating at 1095°C 0 - 0.4% Shr After Heating at 1370°C 0 - 0.8% Exp After Heating at 1600°C 1.8% Exp - 0.5% Shr Thermal Conductivity W/mK At 205°C 0.51 At 425°C 0.55 At 650°C 0.58 At 870°C 0.62 At 1095°C 0.65	After Heating at 1095°C	2.10 - 3.10
After Heating at 105°C After Heating at 815°C After Heating at 1095°C After Heating at 1095°C After Heating at 1370°C After Heating at 1370°C Permanent Linear Change - ASTM C113 and C865 After Heating at 105°C After Heating at 815°C After Heating at 815°C After Heating at 1095°C O.2% Exp - 0.3% Shr After Heating at 1370°C O- 0.4% Shr After Heating at 1370°C O- 0.8% Exp After Heating at 1600°C Thermal Conductivity W/mK At 205°C At 425°C At 650°C At 650°C At 870°C At 1095°C O.65	After Heating at 1370°C	4.14 - 6.90
After Heating at 815°C After Heating at 1095°C After Heating at 1370°C After Heating at 1370°C Permanent Linear Change - ASTM C113 and C865 After Heating at 105°C After Heating at 815°C After Heating at 815°C After Heating at 1095°C After Heating at 1095°C After Heating at 1370°C After Heating at 1370°C After Heating at 1600°C Thermal Conductivity W/mK At 205°C At 425°C At 650°C At 870°C At 870°C At 870°C At 1095°C At 1095°C At 1095°C	Cold Crushing Strength - ASTM C133 and C865	MPa
After Heating at 1095°C After Heating at 1370°C Permanent Linear Change - ASTM C113 and C865 After Heating at 105°C After Heating at 815°C After Heating at 1095°C After Heating at 1095°C After Heating at 1095°C After Heating at 1370°C After Heating at 1370°C After Heating at 1600°C Thermal Conductivity W/mK At 205°C At 425°C At 650°C At 870°C At 870°C At 1095°C At 1095°C O.90 - 17.20 Ac 90 - 20.70 D.1% Shr D.2% Exp - 0.3% Shr D.2% Exp - 0.4% Shr D.2% Exp D.2% E	After Heating at 105°C	9.70 - 20.70
After Heating at 1370°C 6.90 - 20.70 Permanent Linear Change - ASTM C113 and C865 After Heating at 105°C 0.1% Shr After Heating at 815°C 0.2% Exp - 0.3% Shr After Heating at 1095°C 0 - 0.4% Shr After Heating at 1370°C 0 - 0.8% Exp After Heating at 1600°C 1.8% Exp - 0.5% Shr Thermal Conductivity W/mK At 205°C 0.51 At 425°C 0.55 At 650°C 0.58 At 870°C 0.62 At 1095°C 0.65	After Heating at 815°C	6.90 - 17.20
Permanent Linear Change - ASTM C113 and C865 After Heating at 105°C 0.1% Shr After Heating at 815°C 0.2% Exp - 0.3% Shr After Heating at 1095°C 0 - 0.4% Shr After Heating at 1370°C 0 - 0.8% Exp After Heating at 1600°C 1.8% Exp - 0.5% Shr Thermal Conductivity W/mK At 205°C 0.51 At 425°C 0.55 At 650°C 0.58 At 870°C 0.62 At 1095°C 0.65	After Heating at 1095°C	6.90 - 17.20
After Heating at 105°C After Heating at 815°C O.2% Exp - 0.3% Shr After Heating at 1095°C O - 0.4% Shr After Heating at 1370°C O - 0.8% Exp After Heating at 1600°C After Heating at 1600°C Thermal Conductivity W/mK At 205°C At 425°C At 650°C At 870°C At 870°C At 1095°C O.55 At 1095°C O.65	After Heating at 1370°C	6.90 - 20.70
After Heating at 1095°C After Heating at 1095°C O - 0.4% Shr After Heating at 1370°C O - 0.8% Exp After Heating at 1600°C Thermal Conductivity W/mK At 205°C At 425°C At 650°C At 870°C At 870°C At 1095°C O.55 O.65	Permanent Linear Change - ASTM C113 and C865	
After Heating at 1095°C After Heating at 1370°C O - 0.8% Exp After Heating at 1600°C Thermal Conductivity W/mK At 205°C O .51 At 425°C At 650°C At 870°C At 870°C At 1095°C O .65	After Heating at 105°C	0.1% Shr
After Heating at 1370°C After Heating at 1600°C Thermal Conductivity W/mK At 205°C 0.51 At 425°C At 650°C 0.55 At 870°C 0.62 At 1095°C 0.65	After Heating at 815°C	0.2% Exp - 0.3% Shr
After Heating at 1600°C Thermal Conductivity W/mK At 205°C 0.51 At 425°C 0.55 At 650°C 0.58 At 870°C 0.62 At 1095°C 0.65		0 - 0.4% Shr
Thermal Conductivity W/mK At 205°C 0.51 At 425°C 0.55 At 650°C 0.58 At 870°C 0.62 At 1095°C 0.65	After Heating at 1370°C	0 - 0.8% Exp
At 205°C 0.51 At 425°C 0.55 At 650°C 0.58 At 870°C 0.62 At 1095°C 0.65	After Heating at 1600°C	1.8% Exp - 0.5% Shr
At 425°C 0.55 At 650°C 0.58 At 870°C 0.62 At 1095°C 0.65	Thermal Conductivity	W/mK
At 650°C 0.58 At 870°C 0.62 At 1095°C 0.65	At 205°C	0.51
At 650°C 0.58 At 870°C 0.62 At 1095°C 0.65	At 425°C	0.55
At 1095°C 0.65		0.58
	At 870°C	0.62
Shelf Life (Under Proper Storage Conditions) 365 days	At 1095°C	0.65
	Shelf Life (Under Proper Storage Conditions)	365 days

Note: The test data shown are based on average results of control tests and are subject to normal variation on individual tests. These results cannot be taken as maximum or minimum requirements for specification purposes.

 ${\it MSDS, Installation Guidelines and Dry\ Out\ Schedules\ are\ also\ available}.$

