

Kanthal Super I 700

(Molybdenum disilicide)

Kanthal Super is a unique material combining the best properties of metallic and ceramic materials. Like metallic materials it has good heat and electric conductivity and like ceramics it withstands corrosion and oxidation and has low thermal expansion. It is not affected by thermal shock and is strong enough to withstand many years of service as a heating element.

Typical area of application for Super 1700 includes most types of industrial furnace for heat treatment forging sintering, glass melting and refining. Also for use in radiant tubes.

MECHANICAL PROPERTIES

Hardness	Bending strength	Compression strength	Fracture toughness
HV			K _{Ic}
GPa	MPa	MPa	MPa√m
9	450	1400-1500	3-4

TENSILE STRENGTH AT ELEVATED TEMPERATURES

Temperature °C (°F)	MPa
1500 (2820)	100

PHYSICAL PROPERTIES

Density g/cm ³ (lbs/in ³)	5.6 (0.20)	
Porosity %	< 1	
Emissivity	0.70-0.80	
Temperature °C (°F)	20-600 (68-1110)	600-1200 (1110-2190)
W m ⁻¹ K ⁻¹	30	15
Coefficient of linear expansion 10 ⁶ /K	7-8	
Specific heat capacity at 20°C (68°F) kJ kg ⁻¹ K ⁻¹	0.42	
Maximum operating temperature in air °C (°F)	1700 (3090)	

DISCLAIMER:

Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice. This datasheet is only valid for Kanthal materials.