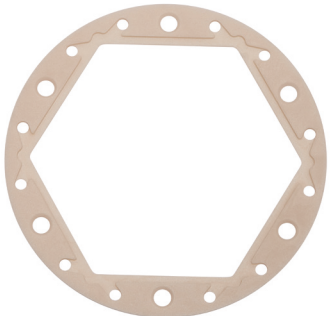
ceratec

Material data sheet AIN180



Description	
Description	Aluminium nitride (AIN) is characterised by a combination of extremely high thermal conductivity and good electrical insulation properties. Its comparatively good machinability also enables thin walls and complex geometries. The ceramic is easy to metallise.
Common applications	Electronic components, circuit carriers, electrically insulating heat sinks, heating tubes, heating crucibles
Production options	Round components up to Ø 150 mm, flat components up to an edge length of 400 mm, drilled holes from Ø 0.3 mm, female threads from M1.6, tolerances in the micron range (µm), cylindrical grinding, surface grinding, 5-axis simultaneous grinding, wall thicknesses from 0.3 mm

General properties		
Colour		Grey-green (milky)
DIN designation		
Chemical composition		AIN
Density	g/cm3	3.3
Open porosity		0

Mechanical properties		
Transverse rupture	MPa	> 300
Compressive strength	MPa	3100
Modulus of elasticity	GPa	310

Electrical properties		
Volume resistivity	Ω cm	$> 10^{12}$
Electric strength		> 20
Dielectric constant at 25°C and 1 GHz		8,6

Thermal properties		
Max. service temperature (in air)	°C	1000
Coefficient of linear expansion	$10\text{-}6K^{-1}$	3.6–5.6
Thermal conductivity at 20 °C	W/mK	180±10

Industries

Suitable for all industries except welding and soldering.
Ideal for use in micro and high-performance electronics.

The preliminary remark to DIN 40685 applies analogously to the property values given in the table, whereby the values provided here only apply to the test specimens on which they were measured. All information reflects our current knowledge and is subject to change without notice. Its applicability to other geometries is not assured. In other words, the values given here are merely intended as a guide.

Special materials:
Are you looking for a precision component made of a specific ceramic? Contact us for more information! Since every production step is traceable, we can also process and procure special materials according to each customer's specifications.

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