DEGUSSIT® DD57

Material Type: Alumina (α-Al_2O_3)
MECHANICAL AND PHYSICAL PROPERTIES OF THE MATERIAL (TYP.)

Characteristic	Standard	Specification	Unit	Value
Content			[%]	**> 99.5**
Density (ρ_b)	DIN EN ISO 18754		[g/cm³]	**≥ 3.90**
Open (apparent) porosity (π_a)	DIN EN ISO 18754		[vol-%]	**0**
Average size of crystallites (g_{mli})	ISO 13383-1	A1	[µm]	**10**
Flexural strength ($\sigma_{f,4}$)	DIN EN 843-1	Four-Point-Bending	[MPa]	**300**
Compressive strength ($\sigma_{c,m}$)	DIN ISO 17162		[MPa]	**3000**
Young's modulus of Elasticity (E)	EN 843-2	dynamic	[GPa]	**380**
Poisson's ratio (μ)	EN 843-2	resonance	[-]	**0.22**
Vickers Hardness (HV 1.0)	DIN EN ISO 14705	Procedure A	[GPa]	**16.3**
Maximum service temperature (T_{max})		in air	[°C]	**1950**
Mean coefficient of linear thermal expansion ($\bar{\alpha}$)	DIN EN ISO 17562	20 - 100 °C 20 - 1000 °C	[10^{-6}/K]	**7.5** **8.5**
Specific heat capacity (c_p)	DIN EN 821-3	20 °C	[J/(kg·K)]	**900**
Thermal conductivity (λ)	DIN EN ISO 18755	100 °C	[W/m·K]	**34.9**
Typical colour			[-]	**red**

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