

	Aluminium oxide			Zirconia		Silicon nitride	Aluminium nitride
General properties							
Designation	A995	A997	A300	Z3000	Z2000	SNI750	AIN180
Colour	 White-beige-ivory	 Beige-ivory	 White	 Green-grey	 White	 Grey-black	 Green-grey (milky)
DIN designation	C799	C799	C795	TZP	TZP	SSN	
Chemical composition	Al ₂ O ₃ 99.5%	Al ₂ O ₃ 99.7%	Al ₂ O ₃ 97.6%	ZrO ₂ -Y ₂ O ₃	ZrO ₂ -Y ₂ O ₃	Si ₃ N ₄	AlN
Density g/cm³	> 3.85	3.9	3.76	6.05	6.05	3.18–3.3	3.3
Open porosity	0	0	0	0	0	0	0
Mechanical properties							
Designation	A995	A997	A300	Z3000	Z2000	SNI750	AIN180
Transverse rupture strength MPa	> 310	> 320	296	1400	1000	670	> 300
Compressive strength	2500	> 2800	> 1700	2000	2000	3000	3100
Modulus of elasticity GPa	> 300	380	> 300	205	205	290	310
Electrical properties							
Designation	A995	A997	A300	Z3000	Z2000	SNI750	AIN180
Volume resistivity at 20 °C/1000 °C Ω cm	> 10 ¹⁴ /2.5 x 10 ⁶	> 10 ¹⁴ /2 x 10 ⁷	> 10 ¹⁴	> 10 ¹² / <lt;math>10^3< math><="" td=""> <td>> 10¹²/<lt;math>10^3< math><="" td=""> <td>10¹⁴</td> <td>> 10¹²</td> </lt;math>10^3<></td></lt;math>10^3<>	> 10 ¹² / <lt;math>10^3< math><="" td=""> <td>10¹⁴</td> <td>> 10¹²</td> </lt;math>10^3<>	10 ¹⁴	> 10 ¹²
Electric strength kV/mm	31.5	31.5	> 32.6				> 20
Dielectric constant at 20 °C and 1 GHz	9.3	9.3	9				8.6
Thermal properties							
Designation	A995	A997	A300	Z3000	Z2000	SNI750	AIN180
Max. service temperature (in air) °C	1700	1900	1600	1000	1000	1200	1000
Coefficient of linear expansion 10⁻⁶K⁻¹	8.2	8.2	8.2	10	10	1.4	3.6–5.6
Thermal conductivity at 20 °C W/mK	29.3	34.9	26.8	2	2	24	180±10

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:

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