



**LWK plasma ceramic:
extended service
life, enhanced resist-
ance and higher
profitability**

For more than 40 years LWK has been developing methods to protect engineering components from wear.

Our high level of expertise, good flexibility, staff qualifications and maximum customer dedication by expedient order handling have made us the partner chosen by numerous companies both in Germany and abroad.

LWK has firmly made its mark in the mechanical engineering industry, industrial furnace construction, the steel, petrochemical and glass industries and many others.

Our excellent reputation is based not only on fast problem solving – even over night – but also on the constant improvement of our processes and their flexible adjustment to suit customer applications.

Our stringent quality management system ensures standardised, repeatable production workflows to give our customers the safety which they can always rely on.

	Unit	Alumina Al ₂ O ₃	Spinel Al ₂ O ₃ /MgO	Mullite Al ₂ O ₃ /SiO ₂	Alumina/Zirc. Al ₂ O ₃ /ZrO ₂	Zirconia ZrO ₂ (MgO)
Main components	%	>99,8 Al ₂ O ₃	74-76 Al ₂ O ₃ 24-26 MgO	75-77 Al ₂ O ₃ 23-25 SiO ₂	75-76 Al ₂ O ₃ 24-25 ZrO ₂	73-74 ZrO ₂ 26-27 MgO
Alkali content	%	0,1	–	0,2	0,1	–
Density	g cm ⁻³	3,2	3,2	2,8	3,5	4,4
Water absorption capacity	%	13-15	7-9	7-9	8-10	12-14
Bending strength	MPa	35	45	30	40	15
Modulus of elasticity	GPa	40	75	35	25	12
Hardness HV30	–	210	240	550	340	220
Thermal expansion 20° C – 1000° C	10 ⁻⁶ K ⁻¹	8,4	8,6	5,5	6,5	9,2
Thermal expansion 20° C – 1200° C	10 ⁻⁶ K ⁻¹	8,7	9,0	5,7	7,0	4,0
Thermal conductivity 20° C	W m ⁻¹ K ⁻¹	3,5	2,5	1,2	2,2	0,2
Thermal conductivity 1200° C	W m ⁻¹ K ⁻¹	1,0	0,8	1,0	0,7	0,3
Dielectric strength	kV mm ⁻¹	4,5	4,2	3,0	3,5	3,3
Thermal shock resistance	–	good	good	very good	good	very good

Table shows approximate values for LWK main products.
Other ceramics are available upon request.

LWK

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