

Zalcon – “advancing ceramic material performance”

Zalcon is an advanced fusion cast ceramic, developed specifically to resist impact and sliding abrasion in extreme and arduous conditions.

Zalcon is cast at approximately 1800°C into virtually any required lining shape, eliminating many joints which cause premature failure in other ceramic linings.

Zalcon’s resistance to impact and thermal shock makes it the perfect liner in areas where aggressive materials are handled adjacent to heat sources.

The interlocking crystalline structure of Zalcon gives the material superior physical characteristics. Its co-efficient of friction improves with wear and improves the flow of the material being handled.

CHEMICAL COMPOSITION (TYPICAL)

Alumina	Al ₂ O ₃	50% -51%
zirconium	ZrO ₂	32% -33%
Silica	SiO ₂	14% -16%
Sodium Oxide	Na ₂ O	1% -1.3%
Iron Oxide	Fe ₂ O ₃	0.1% -0.3%
Titanium Oxide	TiO ₂	0.1%
Calcium Oxide	CaO	0.2%
Potassium Oxide	K ₂ O	1% -1.3%

ELEMENTARY QUALITIES OF ZALCON

Hot load deformation	= 1700°C
Shape deformation under 0.2 MPa	= 50 MPa
Cold tensile strength	= 0.75cm ³ /50cm ²
Abrasion resistance (DIN 52108)	= 22 cycles
Thermal Shock Resistance (950/20°C -DIN 52108)	= 300 MPa
Cold Crushing Strength	= 2000 vickers
Hardness	= -0.25% at 400°C
Thermal Expansion	= -0.75% at 1000°
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Thermal Conductivity	= -400°C : 4.0
	= -800°C : 3.3
	= -1200°C : 4.4
Hardness	= Mohs No. 9
Density:	
<i>Absolute in powder form</i>	= 3840kg/m ³ -3920 kg/m ³
<i>Apparent in block form</i>	= 3410kg/m ³ -3550 kg/m ³



Zalcon is the state of the art answer to abrasion in cyclones, pump casings. pulverised coal pipe-work and pneumatic conveying of abrasive materials such as foundry sand, coke, glass batch etc. In summary Zalcon has much greater resistance to heavy impact and thermal shock than bonded alumina ceramics -with at least the same resistance to sliding abrasion.