

Technical Data Sheet

❖ Syalon 050

High hardness with excellent wear resistance

Advantages

- High thermal conductivity
- Extremely wear resistant
- High temperature shock resistance
- 100% gastight due to 0% porosity
- No chemical reaction or erosion in molten aluminium
- High non-wetting features



Description

Syalon 050 is a member of the Si-Al O-N family and belongs to the group of the α -Syalons. It has been specifically designed for high performance under arduous wear conditions.

Syalon 050 is a specialized material intended for applications in which high hardness and excellent wear resistance are required. The material uniquely combines a degree of toughness which normally is not associated with high strength and hardness.

Chemical components

Si_3N_4	90 %
Al_2O_3	6 %
Y_2O_3	4 %

Standard diameters

- outer \varnothing 28mm | inner \varnothing 16mm
- outer \varnothing 22mm | inner \varnothing 12mm
- outer \varnothing 16mm | inner \varnothing 9mm
- outer \varnothing 12,5mm | inner \varnothing 6,5mm
- outer \varnothing 10 mm | inner \varnothing 4 or 6 mm
- outer \varnothing 6 mm | inner \varnothing 4 mm

Standard lengths

Various dimensions, for further info please see list with sizes.

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Mechanical Properties:

		Unit	Value
3 point Room Temperature Modulus of Rupture <small>Specimen 3x3x50 mm, span 19.05mm</small>		[MPa]	800
Weibull Modulus	m		13
Room Temperature Unit Tensile Strength		[MPa]	450
Room Temperature Hardness		[HRA]	94
Fracture Toughness	K1C	[MPam ^{1/2}]	7,7
Poisson's Ratio	ν		0,23
Density		kg/m ³	3,23 x 10 ³
Open Porosity		μm	1-10

Thermal Properties:

Maximum Temperature (air)		[°C]	1.400
Thermal Conductivity	λ (20° C)	[W/mK]	20
Thermal Expansion Coefficient	(0-1200°C)	K-1	3,2x 10 ⁻⁶
Room Temperature Electrical Resistivity		Ohm.m	10 ¹⁰
Thermal Shock Resistance (quenched in cold water)		$\Delta T^\circ \text{C}$	600
Coefficient of Friction Syalon on Syalon 10 W 40 engine oil at 80° C			0,04

Typical physical property data obtained under test conditions. All properties have been measured by independent test authorities. The values given only apply to test bodies on which they were determined, and therefore can only be recommended values.

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