

# Sealing components for liquid spray and dosing



## Introduction

SINTERALL is a world leader in the technical ceramics field, manufacturing a wide range of components for several applications: electrical and electronic engineering applications, textile industry, anti-abrasive nozzles for sandblasting, atomisation and welding, supports, masks and protections for thermal and superficial treatments. Ceramic for vacuum kiln technology, nozzles for industrial burners, for high temperature chemical processes in particularly aggressive and galvanic atmosphere. The techniques of liquid spray and dosing, sealants and rotating supports include seal rings, plungers, pins, bushes and bearings for pumps, shafts, spheres, valves and nozzles for abrasive pastes spray and dosing or for high pressure liquid spray.

## Applications

The considerable diffusion enjoyed by high content aluminium oxide ceramic bodies is due to their high degree of reliability, whatever the application: mechanical seals, pumps for acids and abrasives, reciprocating high pressure dosing pumps, plunger pumps, recirculate, submersible, multistage pumps, electromagnetic pumps, plungers for abrasive paste dispenser, nozzles for spray guns for agricultural appliances and industrial cleaning.

## Ceramic body characteristics

PROPERTIES	unit	ceramic materials		
		Sialox 96	Sialox 98	Sialox 99
Aluminium oxide content	%	96	98	99.9
Specific weight	Kg/dm <sup>3</sup>	>3,75	>3.80	>3.85
Water absorption	%	0.0	0.0	0.0
Modulus of elasticity	Kg/cm <sup>2</sup>	3,6x10 <sup>6</sup>	3,8x10 <sup>6</sup>	3,9x10 <sup>6</sup>
Tensile strenght	Kg/cm <sup>2</sup>	1.800-2.000	2.000-2.300	2.300-2.500
Resistance to impact	Kg/cm <sup>2</sup>	7,15-8,50	8,15-9,00	8,30-9,00
Knoop hardness 100gr	Kg/ cm <sup>2</sup>	17.000	21.000	22.000
Dielectric resistance	KV/mm	12	14	16
Thermal conductivity	Cal/cm <sup>2</sup> °Csec	4,3x10 <sup>-2</sup>	4,8x10 <sup>-2</sup>	4,8x10 <sup>-2</sup>
Coef. Thermal dilatation	10 <sup>-6</sup> / °C	6,5	6,5	6,6
Max. working temperature	°C	1.500	1.600	1.600
Thermal shock resistance	---	excellent	excellent	excellent

The spectrum of high alumina materials which SINTERALL supplies, ranges from 96 to 99.9% of aluminium oxide; they are tailored to meet both the common and the special requirements of modern day industrial technology: it represents the result of combining modern technical knowledge with decades of industrial experience acquired in our production plant. Shafts, bushes, seals, rings, pins and plungers are realized in standard version in SIALOX96. The comparison of the technical properties and better our direct experience suggest Sialox96 as the best ceramic material for these specific appliances.

Extreme hardness, resistance to abrasion added to a low friction factor are the main properties common to all our ceramics, but particularly in Sialox98. All our ceramics are resistant to the attacks of most chemicals and corrosives, both acid and alkali, in solid, gas or liquid form. In extreme case we suggest Sialox 99, which is particularly suitable for applications in severe environment conditions, because of its high degree of chemical inertness.

When requested, precision engineering tolerances are achieved, after firing, by diamond grinding and lapping, reaching a particularly fine surface finish. Although there aren't technical problems associated with diamond grinding, the nature of such operations is reflected in appreciably increased component costs.

Sometimes, the necessity for such work can be avoided when the application is designed in cooperation with Sinterall engineers.

All the mentioned materials have passed the W.R.C. test omologation (WATER RESEARCH CENTER) about the alimentary compatibility.

SINTERALL can supply several ceramic materials to solve every kind of problems, a solution for extreme appliances in every field and environment. A consultation at the design phase, with our technical staff, results in the highest returns in terms of both costs and technical and delivery reliability.

Modern technical knowledge and spirit of innovation linked to years of experience, at disposal of the customers.

**SINTERALL s.r.l. - Via Calabria, 2/4 (Zona Industriale)**  
**20090 Fizzonasco di Pieve Emanuele (MI) ITALIA**  
**Tel 0039 2 90722681 Fax 02 - 90720817**

Web-site [www.sinterall.it](http://www.sinterall.it)

direct email [info@sinterall.it](mailto:info@sinterall.it) [sales@sinterall.it](mailto:sales@sinterall.it) [tech@sinterall.it](mailto:tech@sinterall.it)