Sedal
TECH CERAMICS

Ceramic Components

The faucet's heart

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Sedal Technical Ceramics

Sedal Technical Ceramics is the technical ceramics division of Sedal Group. Launched in 2010, the Company is focused on the design, manufacture and sale of ceramic components for electronics, energy, and automotive, as well as for the industrial machinery, chemical, food industry and sanitary sectors.

It is a worldwide operating ceramic components provider with customers in 4 continents and within its facilities is producing millions of pieces complying with the highest international quality standards.

The long term cooperation with companies around the globe is the key of our success, with a strong focus on becoming your preferred partner.

Taking advantage of decades manufacturing experience and as a result of our R&D activity, Sedal Technical Ceramics has developed, in addition to other materials, SEDALOX®, our own alumina composition with Nano Shelter Technology, which offers outstanding performance to every single product we manufacture.

Starting from raw material, our fully integrated manufacturing process and state-of-the-art facilities guarantee the best results to the most demanding customers.

Applications

OEM ceramic components for any industry

Electronic Application

Energy & Environment

Food Industry

Mechanical System

Chemical Industry

Faucet & Valve

Transportation Industry

OEM Products

Sensor bodies

Substrates

Insulators

Mechanical Sealing Rings

Structural Ceramics

Faucet & Valve Discs

Compliance with

QUALITY SYSTEM CERTIFICATION DNV·GL ISO 9001

ENVIRONMENTAL SYSTEM CERTIFICATION DNV·GL ISO 14001

COMPLIANT · COMPLIANT · COMPLIANT ROHS

COMPLIANT · COMPLIANT · COMPLIANT REACH

NSF®

WRAS APPROVED PRODUCT

KTW

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Our Materials

Our technical ceramics can be made from materials with different properties.

Properties	Units	Standard	DP-AL996	SEDALOX	SEDALOX -WS	TC-996	TC-96
Main Material	%	Type of material	ALUMINA (99,6%)	ALUMINA (96%)	ALUMINA (96%)	ALUMINA (99,6%)	ALUMINA (96%)
Density	g/cm3	EN - 623	≥3.9	≥3.7	>3.7	≥3.85	≥3.7
Flexural Strength	Mpa	GB/T6569	≥300	>250	>250	≥300	>250
Hardness	HV5	ASTM C 1327	>1600	>1100	>1100	>1600	>1100
Fracture thoughness	MPa*m1/2	ASTM C1421	4	4	4	-	-
Young´s modulus	Gpa	EN_15042-1	370	-	330	370	330
Coefficient of linear expansion	*10-6/°C	GB/T7320-2008					
T1	200 °C		-	-	-	6.2-6.8	6.2-6.8
T2	500 °C		-	-	-	7-7.4	7-7.4
T3	800 °C		8.3	8.1	8.1	7.7-8	7.7-8
Thermal conductivity	W/m-K @25°C	ASTM1461	30	24	24	≥27	≥20
Volume resistivity	Ω.cm	ASTM D257	≥1014	≥1014	≥1014	≥1014	≥1014
Specific heat	J/g.K	ASTM1461	1.1	0.8	0.8	0.8-0.9	0.8-0.9
Dielectric strength	KV/mm	ASTM D149	≥20	≥15	≥15	≥20	≥15

Above parameter values apply to standard specimens only and would change according to different shape, size and manufacturing process of products. Other materials can be provided upon request.

Technical Capabilities

Dry Pressing Standard Tolerance

Length & width		mm	±1%
Thickness		mm	±10%
Hole Diameter		<2mm	± 0.1
		2-10mm	± 0.15
		>10mm	± 1%
Radius and corner		mm	0.3

Machining Standard Tolerance

Thickness	mm	±0.05
Parallelism	mm	<0.05
Flatness	mm	<0.0006
Roughness	μm	0.15±0.1

Substrates dimensions and tolerances

Length and Width	10-150 mm	+/- 0,8% (min. +/- 0,1mm)
Thickness	0,38-0,63 mm	+/- 10% (min. +/-0,05mm)
Camber	0,3% of Length	-

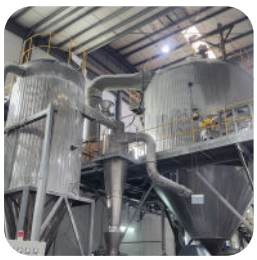
If special tolerance is required, please contact us for inquiry.

Production Process

Our proprietary manufacturing process allows us to create exclusive OEM products using custom-designed raw material formulas with tailored compositions.
We offer high-precision mold manufacturing, advanced production methods, rapid CNC prototyping, and fully equipped facilities with cutting-edge inspection instruments.

Raw Material Preparation

With carefully selected high-purity ceramic powders, blended with binders and additives, and milled into a homogeneous slurry. This ensures consistency in composition and optimal performance during shaping and sintering.



Granulation

The slurry is spray-dried into fine, free-flowing granules. These granules are ideal for compacting, ensuring uniform density and optimal shaping in the next step.

Shaping

Using high-precision moulds and pressing techniques (uniaxial or isostatic), we compact the granules into solid “green bodies” with defined geometry and excellent structural integrity.

Sintering

The green parts are fired at high temperatures to achieve full densification. This critical step fuses the particles, eliminates porosity, and gives the ceramics their final mechanical strength and performance characteristics.

Finishing

After sintering, components are machined, lapped or polished (if required) to achieve tight tolerances and the desired surface finish — especially important in demanding OEM applications.

Final Quality Control

Every part undergoes 100% inspection, including dimensional checks, surface analysis and performance validation, ensuring compliance with the most rigorous quality standards.

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Find the latest information about Sedal Technical Ceramics in our website!

www.sedalceramics.com

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