

Electrolyte Materials

Powders for Electrochemical Applications



High Quality Standards
Flexible Formulations
Lab to Tonnage Scale



For over two decades, Nexceris, has been a trusted manufacturer of high performance ceramic powders, pastes, and inks for solid oxide fuel cell (SOFC) and electrolysis (SOEC) applications. Operating within an ISO 9001:2015 certified facility, Nexceris ensures tight control over critical material properties like stoichiometry, surface area, and precise particle size distribution, guaranteeing lot to lot reproducibility.

Nexceris has an extensive portfolio that includes tailored formulations of ceria, zirconia (including YSZ and ScSZ), and proton-conducting materials such as BZY and BZCY are available in various grades optimized for barrier layers, mechanical supports, and ion exchange membranes.

Scaled Operations

As the emerging energy market has grown, so has Nexceris and its material production capacity. Nexceris has multiple powder manufacturing lines capable of producing tonnage quantities. Customers can focus on delivering their products knowing that Nexceris has their powder needs covered today and into the future.



Tailored Material Solutions

Nexceris can tailor any FCM electrolyte material to meet all customer-specific requirements. From custom formulations to physical specifications adjustments, Nexceris' team of material scientists takes an active role in supporting customer research and development. Nexceris also works with its customers to maximize performance specifics within their unique components and systems.

In Stock Materials Ready for Immediate Delivery

Tailored formulations and physical specifications to optimize performance

High purity and reproducibility

Designed for tape casting, spray application, or electrode incorporation

Scalable production to meet the needs of researchers and manufacturers

Submicron particle sizes to assist in lower processing temperatures

Doped Ceria Materials

Part No.	Name	Composition	Surface Area	PSD (D50)
114101	GDC10-HP	$Gd_{0.10}Ce_{0.90}O_{1.95}$	10-14 m ² /g	0.1-0.4 μm
112101	GDC10-TC	$Gd_{0.10}Ce_{0.90}O_{1.95}$	5-8 m ² /g	0.1-0.4 μm
113101	GDC10-M	$Gd_{0.10}Ce_{0.90}O_{1.95}$	30-40 m ² /g	0.1-0.4 μm
112102	GDC20-TC	$Gd_{0.20}Ce_{0.80}O_{1.95}$	5-8 m ² /g	0.1-0.4 μm
114201	SDC20-HP	$Sm_{0.20}Ce_{0.80}O_{1.95}$	10-14 m ² /g	0.1-0.4 μm
112202	SDC20-TC	$Sm_{0.20}Ce_{0.80}O_{1.95}$	5-8 m ² /g	0.1-0.4 μm

Additional compositions are available at fuelcellmaterials.com

Zirconia Based Materials

Part No.	Name	Composition	Surface Area	PSD (D50)
312065	6ScSZ-TC	$(Sc_2O_3)_{0.06}(ZrO_2)_{0.94}$	6-11 m ² /g	0.4-0.7 μm
312007	10ScSZ-TC	$(Sc_2O_3)_{0.10}(ZrO_2)_{0.90}$	8-11 m ² /g	0.4-0.7 μm
312005	8YSZ-TC	$(Y_2O_3)_{0.08}(ZrO_2)_{0.92}$	6-9 m ² /g	0.4-0.7 μm
312009	8YSZ-U1	$(Y_2O_3)_{0.08}(ZrO_2)_{0.92}$	9-14 m ² /g	0.35-0.45 μm
312022	8YSZ-U5	$(Y_2O_3)_{0.08}(ZrO_2)_{0.92}$	3-7 m ² /g	0.9-1.2 μm
312008	8YSZ-U35	$(Y_2O_3)_{0.08}(ZrO_2)_{0.92}$	1-3 m ² /g	3-5 μm
312053	BZY20	$BaZr_{0.8}Y_{0.2}O_{3-δ}$	15-30 m ² /g	<1 μm
312054	BZCY21	$BaZr_{0.7}Ce_{0.2}Y_{0.1}O_{3-δ}$	15-30 m ² /g	<1 μm

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Fuel Cell Materials is the commercial product brand of Nexceris. Nexceris has thirty (30) years of experience innovating products, services, and intellectual property in the electrochemical and catalyst spaces.



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