



MATERIALS FUEL CELLS

- Cells and Substrates G 11

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Neyco and fuelcellmaterials.com are the premier source for solid oxide fuel cell materials, components, test fixtures and fabrication aides. Our technology, quality and customer support have made us a leader in the fuel cell industry. Backed by our expertise, research and industry knowledge we specialize in providing the highest quality solid oxide fuel cell and fuel processing products to our clients.



Cells and Substrates

ELECTROLYTE SUPPORTED CELLS AND SINGLE-SIDED CELLS

The NextCell™ uses the patent-pending Hionic™ electrolyte support which is more than four times stronger than the most popular fully stabilized YSZ-8 material, with conductivity surpassing that of YSZ-8. Improved flexibility makes the cells less brittle and therefore more forgiving during operations such as testing and stack assembly.

- Electrolyte supported cells have high structural integrity and fuel utilization while offering simple sealing.
- Custom sizes and shapes are available upon request.
- Single sided cells work very well as an aid for researching electrode compositions.
- The NextCell™ uses a 150 µm (+/- 15 µm) Hionic™ electrolyte with 50 µm multi-layer electrodes.

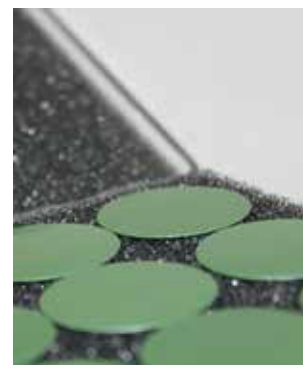


P/N	PRODUCT NAME	SIZE	TYPE	QUANTITIES
212101	SECC-2.0	20 mm Ø	Cathode Only	Min. 5 pcs
212102	SECC-2.5	25 mm Ø	Cathode Only	
212201	SECA-2.0	20 mm Ø	Anode Only	
212202	SECA-2.5	25 mm Ø	Anode Only	
213201	NEXTCELL-10	100 x 100 mm ²	Full Cell	
213202	NEXTCELL-5	50 x 50 mm ²	Full Cell	
213205	NEXTCELL-2.0	20 mm Ø	Full Cell	
213206	NEXTCELL-2.5	25 mm Ø	Full Cell	
213209	NEXTCELL-7	28 cm ²	Full Cell	

ANODE SUPPORTED CELLS AND BI-LAYERS

Anode supported cells with the Ni-YSZ/YSZ/LSM structure are the most common starting point for intermediate temperature SOFC research and development. Thin electrolytes enhance ionic transport, especially below 800°C. Ni-YSZ anodes and LSM-based cathodes offer excellent catalytic performance and electronic transport.

- Optimal balance of membrane and ionic function using ~10 micrometer thick electrolyte.
- Small and large quantities available to meet R&D budgets.
- Cells and anode-electrolyte bilayers are offered for benchmarking, gas-contaminant performance and cathode material research.



P/N	PRODUCT NAME	SIZE	TYPE	QUANTITIES
213307	ASC-5	50 x 50 mm ²	Anode supported planar cell	Min. 5 pces
313005	AEB-2.0	20 mm Ø	Anode electrolyte button bi-layer	
313006	AEB-2.5	25 mm Ø	Anode electrolyte button bi-layer	
313007	AEB-5	50 x 50 mm ²	Anode electrolyte planar bi-layer	

ELECTROLYTE SUBSTRATE BUTTONS

Using proprietary fabrication methods and materials, we have developed a high strength and high performance electrolyte support. The Hionic™ substrate is more than four times stronger than conventional fully stabilized YSZ-8 electrolyte supports. This high strength allow for thin substrates to be significantly more robust during handling, mounting and processing.

- High conductivity combined with the thinness of the support minimizes the overall resistance of the Hionic™ platform, thus improving the ability to measure the properties of electrodes and cells.
- Perfect starting point for the researcher who wants to test a variety of anode and cathode materials in SOFC development.
- YSZ-8 (8 mole % Ytria) are a low cost option when low performance is acceptable.



P/N	PRODUCT NAME	SIZE	TYPE	QUANTITIES
211201	HIONIC-2.0	20 mm Ø	Substrate	Min. 5 pces
211202	HIONIC-2.5	25 mm Ø	Substrate	
211101	YSZ-2.0	20 mm Ø	Substrate	
211102	YSZ-2.5	25 mm Ø	Substrate	
211103	YSZ-3.2	32 mm Ø	Substrate	
211212	HIONIC-5	50 x 50 mm ²	Substrate	
211211	HIONIC-10	100 x 100 mm ²	Substrate	



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