Lanthanum Strontium Cobalt Ferrite

fuelcellmaterials.com offers a line of perovskite electrode materials based on lanthanum strontium cobalt ferrite (LSCF). This material provides improved low-temperature performance for solid oxide fuel cells and ceramic oxygen generation systems. LSCF has a relatively high thermal expansion and can react with GDC electrolytes at higher annealing temperatures (especially with high cobalt contents). However, when properly synthesized and processed, LSCF provides good cathode performance at temperatures below 750ºC. Specifications and data on our standard LSCF product is provided in the table and figures below. We offer LSCF in powder form. Custom formulations can be delivered typically within three weeks of ordering.

Applications

- Electrode material for ceria-based ceramic electrolytes.
- Cathode material for solid oxide fuel cells operating at temperatures below 750°C.
- Combustion catalysts and sensors.

Benefits

- Higher performance for low-temperature SOFCs.
- Powder characteristics designed for screen printing processes.
- High crystalline-phase and chemical purity.
- Process developed for low cost at high volume.

Table 1. Product Specifications

Composition (LSCF-6428) *	$(La_{0.597}Sr_{0.398})(Co_{0.20}Fe_{0.80})O_{3-\delta}$
Crystal Structure	Single-Phase Perovskite
Surface Area	4-8 m^2/gram
Particle Size (d50)	0.3-0.5 microns (see Figure 2)
Electrical Conductivity	σ > 250 S/cm @ 600ºC
Thermal Expansion	α ~15 ppm/ºC
* Custom formulations available	

sales@fuelcellmaterials.com | (614) 842.6606 | fax (614) 842.6607

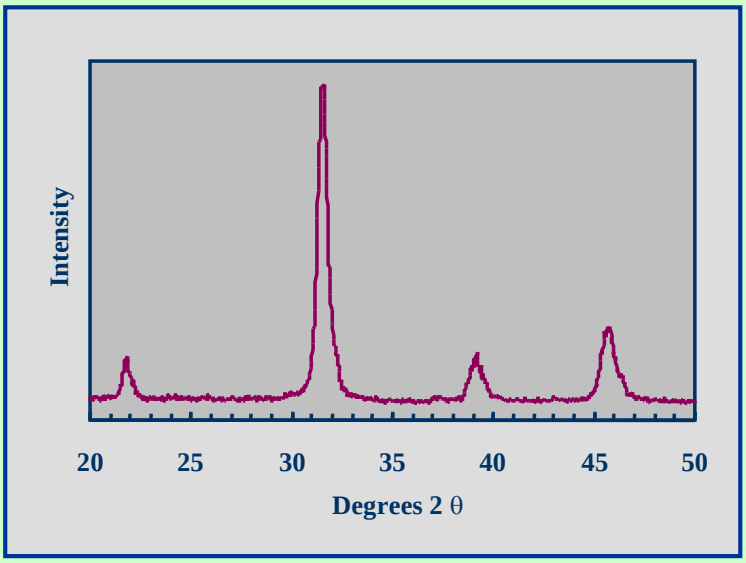

Figure 1. X-ray diffraction pattern of single-phase LSCF powder.

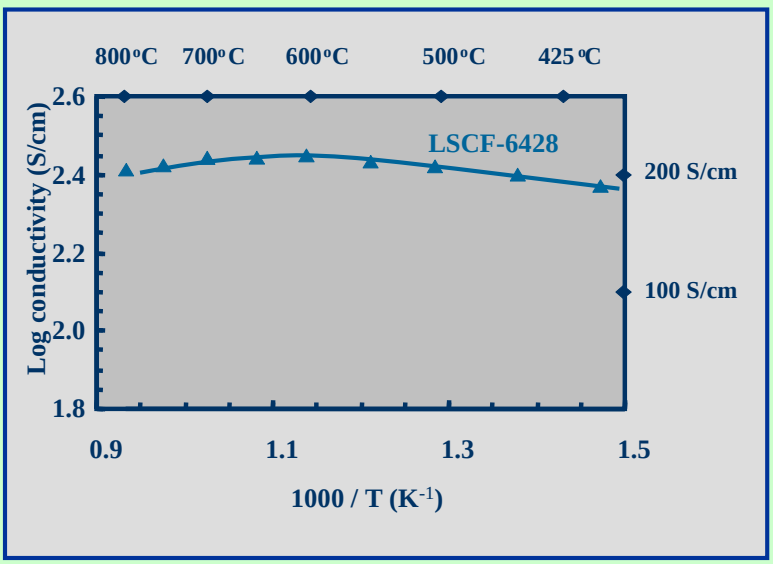

Figure 3. Electrical conductivity of LSCF.

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