



Lanthanum Strontium Ferrite

fuelcellmaterials.com offers standard and custom formulations of lanthanum strontium ferrite (LSF) electrode materials. LSF is a promising low-temperature cathode material for solid oxide fuel cells, and also can be used as an electrode material for ceramic oxygen generation systems. Its thermal expansion matches that of ceria-based ceramic electrolyte materials and LSF offers improved performance at temperatures below 800°C. Specifications on our standard LSF products are provided in Table 1 (below) and representative data are provided in the figures on the reverse. We offer LSF in various quantities of powder. 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 800°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 *	(La _{0.796} Sr _{0.199})FeO _{3-δ} (LSF-20) (La _{0.597} Sr _{0.398})FeO _{3-δ} (LSF-40)
Crystal Structure	Single-Phase Perovskite
Surface Area	4-8 m ² /gram
Particle Size (d50)	0.3-0.5 micron
Electrical Conductivity	σ > 200 S/cm @ 700°C
Thermal Expansion	α ~ 13 ppm/°C (LSF-20) α ~ 15 ppm/°C (LSF-40)
* Custom formulations available	

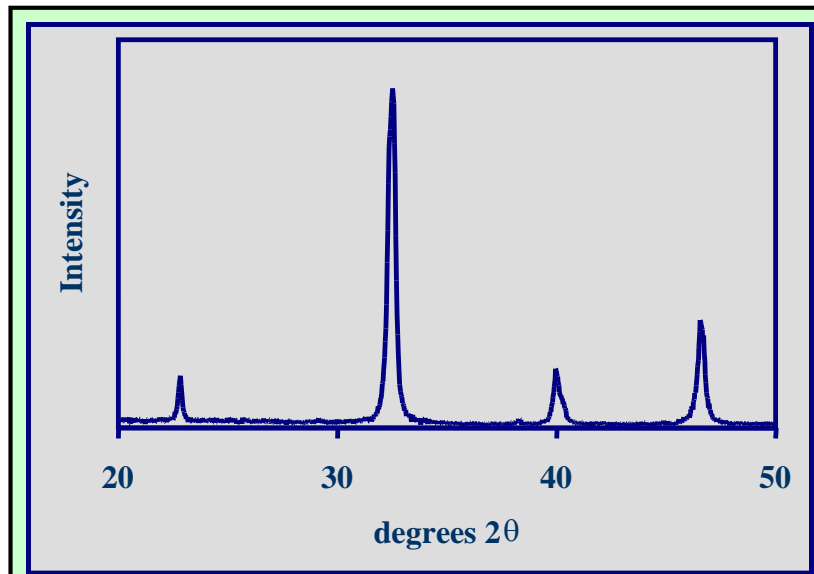


Figure 1. X-ray diffraction pattern of single-phase LSF-40 powder.

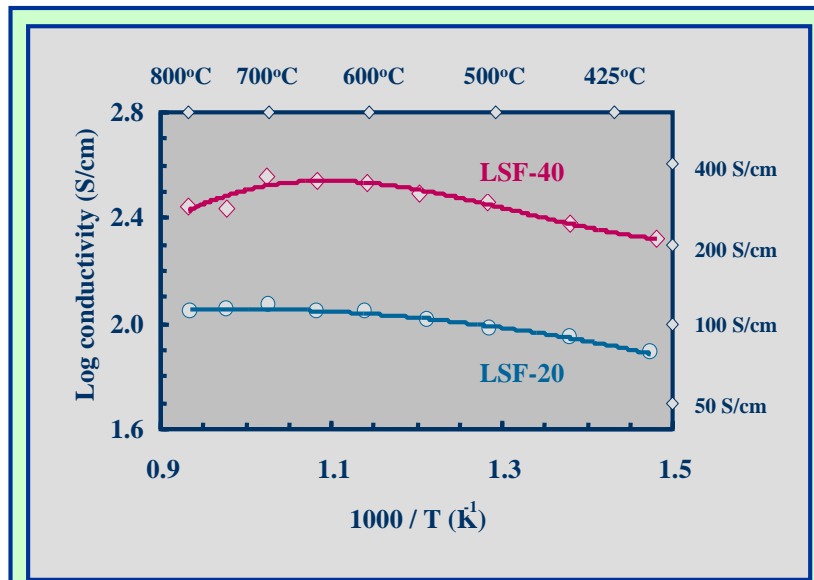


Figure 3. Electrical conductivity of LSF ceramics.

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