oerlikon
metco

Material Product Data Sheet
Lanthanum-Strontium-Cobalt-Ferrite (LSCF) Powder

Thermal Spray Powder Products:
New! Metco™ 6830, New! Metco 6830A,
New! Metco 6831, New! Metco 6831A

1 Introduction

Lanthanum-Strontium-Cobalt-Ferrite (LSCF) materials are used as cathodes in SOFC applications as well as oxygen permeable membranes to separate oxygen from air. For each of these applications, an adaptive chemistry is available from Oerlikon Metco.

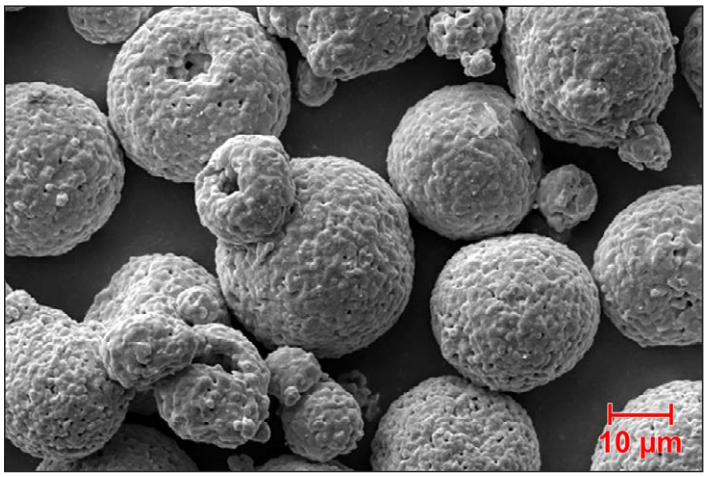
Oerlikon Metco LSCF is synthesized in-house using a solid state reaction process from high-purity raw materials to produce these powders. Chemical compositions for Oerlikon Metco fuel cell materials are expressed in mol %.

These products are agglomerated and sintered materials sized for application using thermal spray processes.

1.1 Typical Uses and Applications

- For SOFC (solid oxide fuel cells) cathode layers
- Oxygen-permeable membranes in gas separators

Quick Facts	
Classification	Ceramic, SOFC
Chemical formula	$La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_3$ $La_{0.78}Sr_{0.2}Co_{0.2}Fe_{0.8}O_3$
Crystal structure	Single-phase Perovskite
Manufacture	Agglomerated and sintered
Purpose	Protective coating
Morphology	Spheroidal
Apparent density	1.5 – 2.8 g/cm^3
Process	Atmospheric Plasma Spray or LPPS™ Hybrid PS-TF



SEM photomicrograph of Metco 6830

© 2015 Oerlikon Metco

2 Material Information

2.1 Chemical Composition

Product	Stoichiometry (mol %)	Crystal Structure	% Purity
Metco 6830	$La_{0.6}$ $Sr_{0.4}$ $Co_{0.2}$ $Fe_{0.8}$ O_3	Single-phase Perovskite	> 99.9
Metco 6830A	$La_{0.6}$ $Sr_{0.4}$ $Co_{0.2}$ $Fe_{0.8}$ O_3	Single-phase Perovskite	> 99.9
Metco 6831	$La_{0.78}$ $Sr_{0.2}$ $Co_{0.2}$ $Fe_{0.8}$ O_3	Single-phase Perovskite	> 99.9
Metco 6831A	$La_{0.78}$ $Sr_{0.2}$ $Co_{0.2}$ $Fe_{0.8}$ O_3	Single-phase Perovskite	> 99.9

Note: Other stoichiometries are available upon request.

2.2 Particle Size Distribution

Product	Nominal Size Range µm
Metco 6830	–25 +5
Metco 6830A	–45 +15
Metco 6831	–25 +5
Metco 6831A	–45 +15

Note: Particle size analysis by laser diffraction (Microtrac). Other size distributions are available upon request.

2.3 Key Selection Criteria

- Use material best suited for the specific plasma gun and thermal spray application process to be used.
- Choose material according OEM specification, if applicable.
- The fine cut (–25 +5 µm) materials are designed to be applied using the LPPS™ Hybrid PS-TF process. Applied coatings are gas-tight.

2.4 Related Products

- Metco 6613 is an 8 % Mol YsZ material designed for SOFC applications.
- Metco 6800 and Metco 6801 are LSM materials designed to create layers that act as chromium diffusion barriers in SOFCs.
- Metco 6820 is an MCO material that is designed to create layers that act as chromium diffusion barriers in SOFCs.

3 Coating Information

3.1 Coating Parameters

Please contact your Oerlikon Metco Account Representative for parameter availability. For specific coating application requirements, the services of Oerlikon Metco's Coating Solution Centers are available.

Recommended Atmospheric Plasma Spray Guns
TriplexPro series

Note: for LPPS Hybrid PS-TF processing, please contact Oerlikon Metco

© 2015 Oerlikon Metco

4 Commercial Information

4.1 Ordering Information and Availability

	Order No.	Package Size	Availability	Distribution
Metco 6830	1081556	5 kg (approx. 11 lb)	Stock	Global
Metco 6830A	1081557	5 kg (approx. 11 lb)	Stock	Global
Metco 6831	1081558	5 kg (approx. 11 lb)	Stock	Global
Metco 6831A	1081559	5 kg (approx. 11 lb)	Stock	Global

4.2 Handling Recommendations

- Store in the original container in a dry location.
- Tumble contents prior to use.
- Opened containers should be stored in a drying oven to prevent moisture pickup.

4.3 Safety Recommendations

See SDS 50-1358 (Safety Data Sheet) in the localized version applicable for the country where the material will be used. SDS are available from the Oerlikon web site at www.oerlikon.com/metco (Resources – Safety Data Sheets).

Information is subject to change without prior notice.

© 2015 Oerlikon Metco

www.oerlikon.com/metco
info.metco@oerlikon.com