

MELsperserTM Yttria Zirconia Nano Dispersions

Luxfer MEL Technologies MELsperser range are high purity, crystalline aqueous dispersions. With a highly uniform particle size, ceramics formed from these dispersions offer enhanced mechanical properties with a reduced grain size compared to conventional YSZ materials.

Luxfer MEL Technologies MELsperser range are manufactured in the UK by a precisely controlled chemical precipitation process that ensures consistency of both purity and performance.

Features

Fully aqueous based dispersions, offering a more sustainable solvent choice.

Narrow particle size leading to consistent grain sized ceramics.

High stability dispersions with no organic additives

Low viscosity dispersions.

Reduced sintering temperatures compared to sub-micron YSZ.

Applications

Depending on the specific composition and solids content used, MELsperser nano dispersions are commonly used in:

- Advanced ceramics
- Healthcare
- Optical devices
- Coatings
- Filtration
- Abrasives and polishing applications
- Sintering aids

Chemical composition (typical values)

Table 1.

Grade	Y ₂ O ₃ (wt. %)	SiO ₂ (wt. %)	TiO ₂ (wt. %)	Fe ₂ O ₃ (wt. %)
MELsperser 3Y	5.3	0.02	0.02	0.01
MELsperser 5Y	8.0	0.02	0.02	0.01

Physical properties (typical values)

Table 2.

Grade	Z-Avg (nm)	Solids content (wt. %)	pH
MELsperser 3Y	50	20–25	2–4
MELsperser 3YC	50	55–60	3–4.5
MELsperser 5Y	50	20–25	2–4
MELsperser 5YC	50	55–60	3–4.5

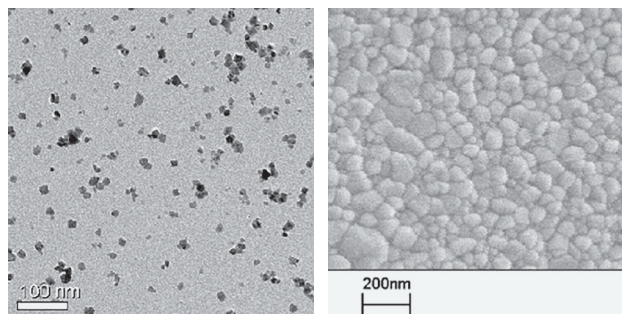


Figure 1. Highly dispersed particles and uniform grain size at sintering temperatures <1200°C.

Packaging

- Standard packaging is 5 or 25 kg UN approved containers
- Bulk quantities available upon request

Safety data sheet

Regional SDS information is available on request.

Discover more at

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