



ZIRCONIUM OXIDE

FINE YTTRIA DOPED GRADES

CAS NUMBER: 1314-23-4

GENERAL CHARACTERISTICS

MEL Chemicals zirconium oxides are dense, white powders of high chemical purity, which are manufactured by the calcination of chemically precipitated intermediates.

APPLICATIONS

MEL Chemicals have developed a range of sub-micron, sinter active fine yttria doped zirconium oxides. The powders are for use in applications such as engineering ceramics, milling media, fibre optic ferrules, oxygen sensors and solid oxide fuel cells.

The properties of these grades of oxide make them suitable for tape casting and injection moulding techniques.

HEALTH & SAFETY

Material Safety Data Sheets are available on request.

TYPICAL PROPERTIES

Grade	Y ₂ O ₃ (%)	SiO ₂ (%)	TiO ₂ (%)	Fe ₂ O ₃ (%)	SO ₃ (%)	Average particle size (µm)	Surface area (m ² g ⁻¹)
MELox 3Y	5.3	0.01	0.01	0.005	0.05	0.5	8.0
MELox 5Y	8.0	0.01	0.01	0.005	0.05	0.5	8.0
MELox 8Y	13.6	0.01	0.01	0.005	0.05	0.5	8.0
MELox 10Y	16.0	0.01	0.01	0.005	0.05	0.5	4.0

FEATURES

- u Ceramics manufactured from our powders are white in colour.
- u The crystallite size can be easily controlled.
- u The grain size of the powders are low, typically, 0.1 to 1µm.
- u The powders can be sintered at 1350-1500°C.
- u The chemical route used to manufacture the powders results in a homogeneous stabiliser distribution.
- u Yttria content, particle size and surface area can be adapted to suit specific requirements.

MEL Chemicals is happy to discuss the product needs of individual clients.

 **MEL**Chemicals®

P.O. Box 6, Lumn's Lane
Swinton, Manchester
M27 8LS ENGLAND
Tel: 0161-911 1066
Fax: 0161-911 1090
<http://www.zrchem.com>

For U.S.A.

 **MEI**

500 Point Breeze Road
Flemington, New Jersey
08822-9111 USA
Tel: 908 782 5800
Fax: 908 782 7768



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