

## CERIUM OXIDE

Cerium Oxide is an off-white to yellow colored powder sometimes called cerium dioxide, cerium(IV) oxide, ceric oxide, ceria. Its trade or hobby names can also be “Jeweler’s Rough” or “Opticians Rough”. CeO<sub>2</sub> is a natural compound most commonly used in ceramics, to polish glass and gems, to sensitize photosensitive glass and in a variety of other applications. Cerium Oxide can be mixed with water to form a paste or slurry. Compatible with most polishing pads it can be used in both low and high speed equipment with recirculating systems.

## TYPICAL PARTICLE SIZE DISTRIBUTION

	CeO 99	CeO 99	CeO 65
Sizing	< 6.0 µm	0.5 µm	
Median (d50 %)	< 1.5 microns	0.5 µm	1-2 microns
d <sub>10</sub>	< 1.0 microns	0.1 µm	< 1.0 microns
d <sub>90</sub>	5.0 microns	1.4 µm	3-4 microns
d <sub>100</sub>	6.0 microns	< 2.0 µm	≤ 5 microns

## CERIUM OXIDE CHEMISTRY

	CeO 99	CeO 99	CeO 65
Total Rare Earth Oxide (TREO)	99%	99%	98%
CeO <sub>2</sub>	99.90 % Min	99.90 % Min	65 % Min
Al	0.055% Max	0.055% Max	-
Fe	0.02% Max	0.02% Max	-
CaO	0.01 % Max	0.01 % Max	0.07 % Max
SiO <sub>2</sub>	0.01 % Max	0.01 % Max	-
La <sub>2</sub> O <sub>3</sub>	-	-	29.5 % Typical
Pr <sub>6</sub> O <sub>11</sub>	-	-	4.3 % Typical
Nd <sub>2</sub> O <sub>3</sub>	-	-	0.1 % Typical
MgO	-	-	0.03 % Typical
ZnO	-	-	0.002 % Typical
Fe <sub>2</sub> O <sub>3</sub>	-	-	0.009 % Typical
Loss on Ignition	0.30 Max	0.30 Max	0.6 Typical

## TYPICAL PROPERTIES

High Hardness

High Oxygen Ion Conductivity

Absorbs Ultraviolet Radiation Precision

## TYPICAL APPLICATIONS

Polishing

Lapping

Ceramic Parts