

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”. CeO₂ 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 ₁₀	< 1.0 microns	0.1 µm	< 1.0 microns
d ₉₀	5.0 microns	1.4 µm	3-4 microns
d ₁₀₀	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 ₂	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 ₂	0.01 % Max	0.01 % Max	-
La ₂ O ₃	-	-	29.5 % Typical
Pr ₆ O ₁₁	-	-	4.3 % Typical
Nd ₂ O ₃	-	-	0.1 % Typical
MgO	-	-	0.03 % Typical
ZnO	-	-	0.002 % Typical
Fe ₂ O ₃	-	-	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