

HfO₂/ZrO₂

HAFNIUM DIOXIDE/ ZIRCONIUM DIOXIDE

Application

HfO₂/ZrO₂ mixtures are substances for the production of transparent optical films with high refractive index.

HfO₂/ZrO₂ thin films are very hard with good adhesion on the substrate.

Purity

HfO₂ + ZrO₂ > 99.9%

Suggested Evaporation Method

electron beam

Forms of Delivery

granules, slugs, tablets

Typical Analysis in wt%

HfO ₂ /ZrO ₂	> 99.9%
Al ₂ O ₃	< 0.010
C	< 0.020
CaO	< 0.002
CoO	< 0.002
Cr ₂ O ₃	< 0.002
CuO	< 0.002
Fe ₂ O ₃	< 0.010
MgO	< 0.002
MnO	< 0.002
MoO ₃	< 0.002
Na ₂ O	< 0.002
Nb ₂ O ₅	< 0.002
NiO	< 0.002
P ₂ O ₅	< 0.002
PbO	< 0.002
SiO ₂	< 0.002
SnO ₂	< 0.002
Ta ₂ O ₅	< 0.002
TiO ₂	< 0.020
V ₂ O ₅	< 0.002
WO ₃	< 0.002
ZnO	< 0.002

Physical and optical properties

melting point: 2700-2800 °C
 approx. evaporation temp. . . 2500 °C
 theoretical density: . . . 9.5 - 9.6 g/cm³
 density supplied 9.0 - 9.2 g/cm³
 transparent region 250-11000 nm
 refractive index 1.95 - 2.1

(depending on substrate temperature and wavelength)