

# POLYRUBY hot isostatic pressed alumina

ROHS + REACH COMPLIANT

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## Physical properties

<b>DENSITY</b>	3.99 g/cm <sup>3</sup>
<b>COMPOSITION</b>	Al <sub>2</sub> O <sub>3</sub> + Cr <sub>2</sub> O <sub>3</sub>
<b>COLOUR</b>	red +/- translucent
<b>GRAIN SIZE</b>	< 4 um

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## Thermal properties

<b>SPECIFIC HEAT</b>	900 j/kg · k (at 100°C)
<b>CONDUCTIVITY</b>	30 w/m.k (at 20°C)
<b>EXPANSION</b>	7.5 · 10 <sup>-6</sup> /°C
<b>MAX WORKING TEMPERATURE</b>	1500°C

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## Mechanical properties

<b>HARDNESS (DURETÉ)</b>	2000 Vickers
<b>MODULUS OF RUPTURE</b>	2500MPa
<b>POISSON'S RATIO</b>	0.23
<b>YOUNG'S MODULUS</b>	400 GPa
<b>FRACTURE TOUGHNESS</b>	5 MPa · m <sup>1/2</sup>
<b>COMPRESSIVE STRENGTH</b>	4000 MPa
<b>TENSILE STRENGTH</b>	500 MPa

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## Chemical properties

<b>ACIDS AND ALKALIS ATTACK</b>	excellent resistance
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## Electrical properties

<b>DIELECTRIC CONSTANT</b>	9.7 K at 1MHz
<b>RESISTIVITY</b>	5 · 10 <sup>14</sup> Ω · cm (at 20°C)