

# Typical Properties of CIM Materials

Materials	Molecular Formula	Grain Size ( $\mu\text{m}$ )	Density ( $\text{g}/\text{cm}^3$ )	Hardness	Colour
<u>Pure Alumina</u>	$\text{Al}_2\text{O}_3$	<3	3.93	1900 HV	Ivory
<u>Zirconia</u>	$\text{ZrO}_2$	<0.6	6.04	1450 HV	White with a tinge of pink
<u>Zirconia Toughened Alumina (10%)</u>	$\text{Al}_2\text{O}_3$ 90% + $\text{ZrO}_2$ 10%	<1	4.12	2000 HV	White with a tinge of pink
<u>Zirconia Toughened Alumina (15%)</u>	$\text{Al}_2\text{O}_3$ 85% + $\text{ZrO}_2$ 15%	<1	4.25	2000 HV	White with a tinge of pink

Materials	Grades	Density ( $\text{g}/\text{cm}^3$ )	Hardness	Permeability
<u>Soft Ferrites</u>	<u>Nickel-Zinc</u>	4.60	>350	140 – 160 H/m

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<u>Low Dielectric Constant &amp; High Qf Materials</u>	$\text{Mg}_{2-x}\text{Cu}_x\text{SiO}_4$	<1	3.27	1450 HV	White