CERAMIC

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Ceramic inserts are capable of running at high speeds, thus reducing expensive machining time. Hard turning of 38HRC to 64HRC hardened steel, or rough to finish turning of cast iron are recommended applications for ceramic inserts.

KYOCERA's ceramic grades are designed to resist oxidation and maintain hardness at elevated temperatures.

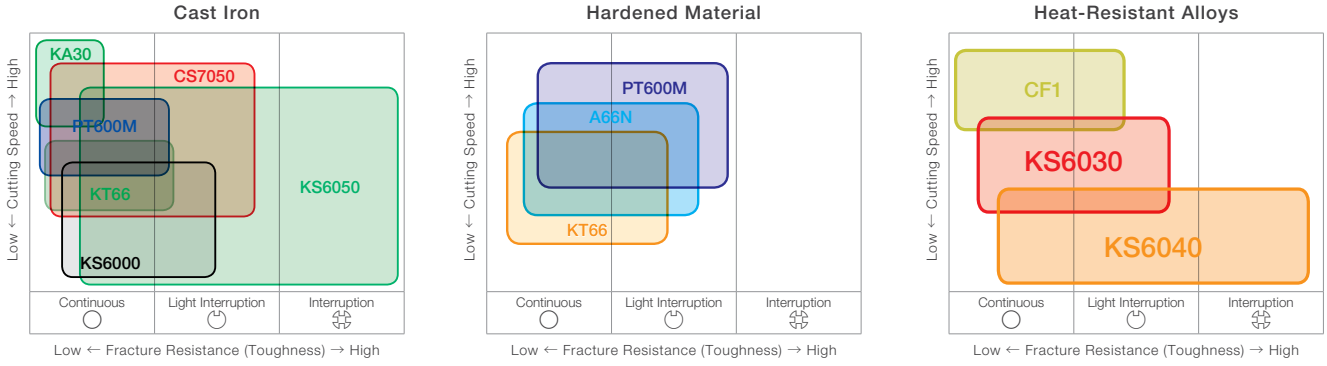
FEATURES

- Excellent wear resistance for high cutting speeds
- Ceramic maintains good surface finishes due to the low affinity to workpiece materials
- Silicon nitride ceramic has improved thermal shock resistance allowing cast iron cutting using coolants

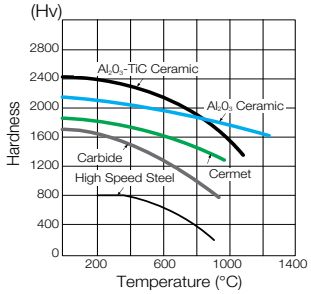
FEATURES OF CERAMIC

Material	Description	Color	Main Component (Coating Composition)	Coating Layer	Hardness of Substrate (GPa)	Fracture Toughness (MPa·m½)	Transverse Strength (MPa)	Advantages
K Cast Iron	KA30	White	Al_2O_3	-	17.5	4.0	750	· Aluminum Oxide ceramic (Al_2O_3) · Application: Finishing of cast iron at high cutting speeds without coolant
K Cast Iron	KS6050	Gray	Si_3N_4	-	15.6	8.0	1,200	· Silicon nitride ceramic (Si_3N_4) · Application: Roughing and interrupted machining of cast iron. Focusing on stability. (with or without coolant)
K Cast Iron	CS7050	Grayish White	Si_3N_4 (Special Al_2O_3 Coat)	Thin Coating	15.6	8.0	1,200	· Silicon nitride ceramic (Si_3N_4) + CVD Coated Carbide (Special Al_2O_3 COAT) · Application: Finishing and continuous machining, and high speed and high efficient machining. (with or without coolant)
K Cast Iron	A65	Black	Al_2O_3+TiC	-	20.1	4.1	980	· Aluminum Oxide and Titanium Carbide ceramic (Al_2O_3+TiC) · Application: Semi-roughing to finishing of steel, cast iron, and hard materials
K Cast Iron H Hardened Materials	A66N	Gold	Al_2O_3+TiC (TiN Coat)	Thin Coating	20.1	4.1	980	· TiN PVD coated Aluminum Oxide and Titanium Carbide ceramic (TiN coated Al_2O_3+TiC) · Application: Semi-roughing to finishing of hard materials
H Hardened Materials	PT600M	Blackish Red	Al_2O_3+TiC (MEGACOAT)	Thin Coating	20.1	4.1	980	· Heat-resistant MEGACOAT on Aluminum Oxide and Titanium Carbide ceramic (MEGACOAT Al_2O_3+TiC) · Application: Semi-roughing to finishing of cast iron, hard materials and hardened roll materials
S Heat-Resistant Alloys	KS6030	Gray	SiAlON	-	15.2	6.0	600	· SiAlON Ceramic with superior wear resistance and high resistance against boundary wear · Application: Finishing to medium machining of heat-resistant alloys
S Heat-Resistant Alloys	KS6040	Brown	SiAlON	-	16.7	7 .0	900	· High stability SiAlON ceramic with wear resistance and fracture resistance · Application: Roughing of heat-resistant alloys

Application Maps



High Temperature Hardness



PVD Coating Properties