

Corrosion-resistant cemented carbide for EDM - ME40

Corrosion-resistant cemented carbide

Damage reduction when EDM.

Corrosion reduction when WEDM (water type).

Crack reduction by impact in pressing process.

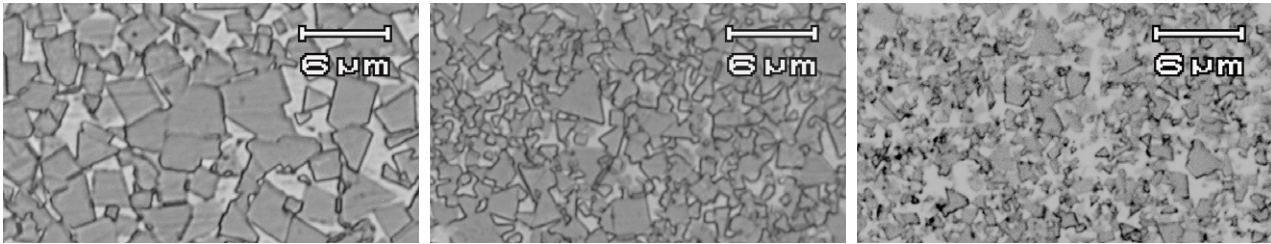
Explanation	<div>1. Design to resist corrosion and strength decrease when WEDM (water type).</div> <div>① Increased transverse rupture strength after WEDM (water type) by optimized WC grain.</div> <div>② Improved corrosion-resistance by optimized component design.</div> <div>2. Design to resist chipping when grinding process so that cutting performance when pressing process is improved. (Improved chipping-resistance by exclusion of coarse grain WC which influences chipping problem.)</div> <div>3. Suitable material grade for crack resistance when crack problems are happened in KX01 or WD20 when pressing process of stainless parts.</div>
Applications	<div>For WEDM (water type) processing in prolonged manufacturing. (Especially for Die)</div> <div>Proceeded by WEDM has an issue regarding chipping in pressing process.</div> <div>Concerned corrosion by wet type processing.</div> <div>Concerned corrosion under humidity environment at storage, etc</div>

Physical property of ME40

Our grade	WC grain size [μm]	Binder phase content [%]	Density [×10³kg/m³] {g/cm³}	Hardness HRA	TRS [GPa]	
					TRS before WEDM	TRS after WEDM
ME40	2.5 - 5.0	12	14.1	88.0	3.2	2.3
G5	2.5 - 5.0	13	14.3	88.0	3.2	2.2
KD40	1.0 (less than)	19	13.6	88.0	3.7	1.9

(Typical figures)

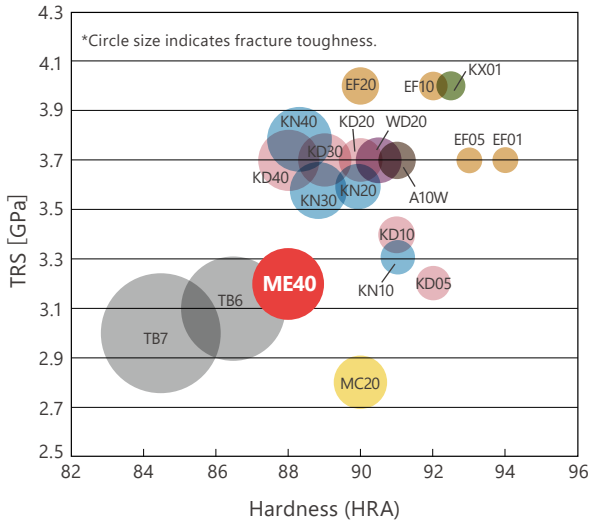
Micrographs



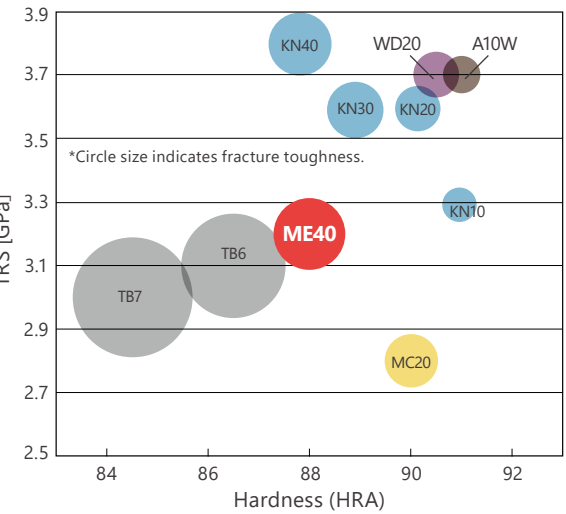
By metallurgical microscope (×1000)

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Positioning in corrosion-resistant cemented carbide

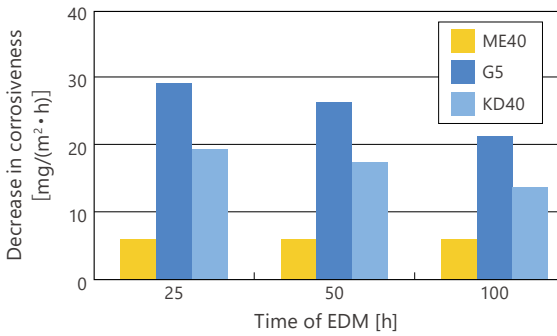


Positioning in cemented carbide for EDM



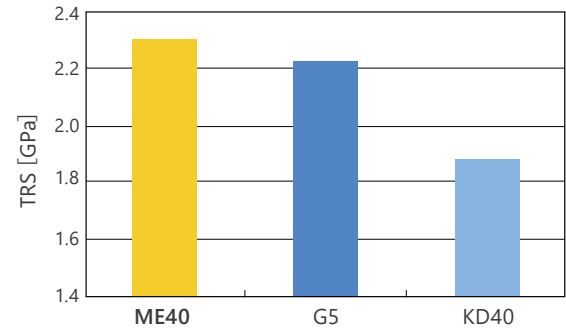
ME40 has excellent balance of wear-resistance and toughness in cemented carbide for EDM.

Performance of corrosion-resistance



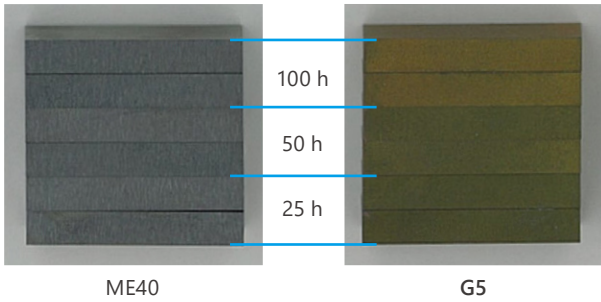
ME40 has excellent corrosion-resistance comparing to other grades which have same hardness.

Performance comparison of TRS after WEDM



ME40 restrains deterioration of strength after EDM comparing to other grades which have same hardness.

Appearance after corrosion test



ME40 keeps same color while G5 became dark brown. (G5 gets rusty)

Corrosion-resistance
500% up
*Compared with G5