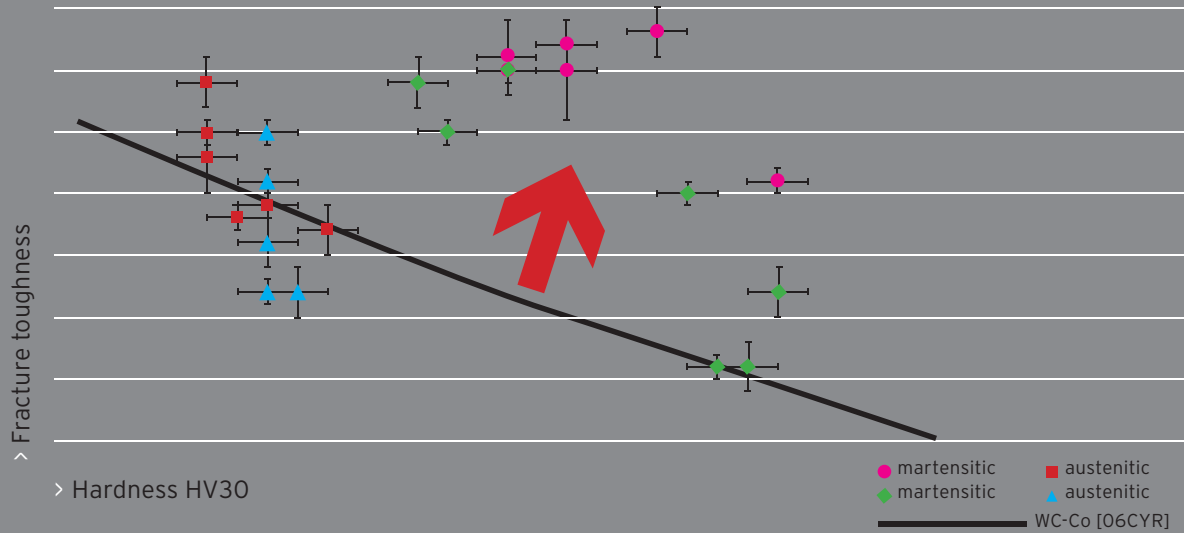


HARTMETALL ESTECH AG
has developed new

Cemented Carbide Grades with an Alternative Binder Iron/Nickel/Cobalt Alloy



- > Increased fracture toughness at a hardness comparable to a cemented carbide grade with cobalt binder



Reference: S. Wagner, FHPHGHGFDUELGLHLDWDHWDWLYHELGHUVVWUXFWXUHDGSRUSLWHLW, TU Wien, 2011

Cemented carbide grade	WC grain size	Binder content %w/w	Applications
> RXE 20	0.8 μm	10 % (Fe/Ni/Co)	Wood- and paper machining > knives, end mills, drills wear protection cutting and punching dies maximum operation temperature 500°C (martensitic)
> RXE40	0.8 μm	20 % (Fe/Ni/Co)	Wood- and paper machining > knives, end mills, drills wear protection maximum operation temperature 500°C (martensitic)
			RXE20 RXE40
> Density		g/cm ³	14.1 13.1
> Hardness HV30			1600 1250
> Fracture toughness		N/mm ² .mm ^{1/2}	10.8 18.5
> Transverse rupture strength		N/mm ²	3200 3600
> Suitability for EDM process			Good Medium
> Resistance against corrosion			Medium Fair

Attention:

Due to the conversion from the martensitic structure to the austenitic structure above 500°C, we strongly recommend to fix the cemented carbide parts made of the grades RXE20 and RXE40 either by gluing or by mechanical means instead of by brazing and soldering.

- > Typical microstructure of our cemented carbide grade RXE40 with iron binder:

