

1.4037, X65CR13

1.4037 is characterised by its high hardenability in conjunction with good corrosion resistance in moderately corrosive environments. Due to its higher carbon content, 1.4037 is more hardenable than 1.4034. It is used in the quenched and tempered condition and due to its high hardness, it is ideally suited for the production of cutting tools of all sorts and surgical implements. acc. to EN 10088-3, DIN 17440, SEW 400

Chemical Composition

Grade	Chemical composition WT %					
	C	Si	Mn	P	S	Cr
1.4037, X65Cr13	0.58-0.70	1.00	1.00	0.040	0.015	12.50-14.50

Mechanical Properties

1.4037, X65Cr13 Mechanical properties acc. to SEW 400

- Tensile strength R_m MPa: Min 840
- Hradness: 265 HB

Physical Properties

- Density (kg/dm³) 7.70
- Electrical resistivity at 20 °C (Ω mm²/m) 0.55
- Magnetizability ok
- Thermal conductivity at 20 °C (W/m K) 30
- Specific heat capacity at 20 °C (J/kg K) 460
- thermal expansion (K^{-1})
 - 20 - 100°C: 10.5×10^{-6}
 - 20 - 200°C: 11.0×10^{-6}
 - 20 - 300°C: 11.5×10^{-6}
 - 20 - 400°C: 12.0×10^{-6}

Heat Treatment

1.4037 can be soft annealed by holding at a temperature in the range 750 to 850°C

Welding Properties

titlehough 1.4037 is generally not welded, it can be soldered in some instances.

Machining Properties

The machinability of this grade of stainless steel is directly related to its hardness. 1.4037 machines similar to carbon steels of the same hardness. titlehough it must be realised that the

machining parameters will vary depending on the structure/hardness of the steel.

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