

TECHNICAL DATA SHEET

High carbon-chromium low alloy steel type CR

General notes:

- » **chrome alloy tool steel** (Material number 1.3505, 100Cr6, AISI 52100)
- » magnetizable
- » hardened by heat treatment, max. hardness 68 HRC
- » moderate resistance to corrosion
- » generally used where strength, hardness and wear resistance are of primary concern
- » typical applications include the production of high quality cutters and pliers ideal for bending and cutting single or multiple filars and for lateral or internal cuts. Typical applications include cutting stents, braided mesh, catheters and guide wires in medical device manufacturing. Also commonly used in electronic assembly and rework, as well as in fine jewellery.

Composition

Component	Wt. %	Component	Wt. %	Component	Wt. %
C	0.95-1.10	Si	0.15-0.35	Mn	0.25-0.45
P	≤0.030	S	≤0.030	Cr	1.35-1.65

Mechanical properties

Density	7.85 g/cm³
Pliers Hardness	45 HRC
Cutters Hardness	63 HRC
Medical-Grade Cutters Hardness	67-68 HRC
Tensile strength, ultimate	2400 MPa
0.2% Yield stress	1800 MPa
Elongation, break	40%
Modulus of elasticity	212 GPa

Thermal properties

Coef. of lin. therm expansion	12.0 E-6/°C	20°C-100°C
Coef. of lin. therm expansion	13.0 E-6/°C	20°C-300°C
Specific heat capacity	0.46 J/(g·K)	
Thermal conductivity	33 W/(m·K)	

Electrical properties

Resistivity	0.30 E-4 Ohm.cm
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This document contains information based on average values as obtained from the results of laboratory tests and observations made on the material. Ideal-tek SA declines all responsibility from an improper use of the product described in this document.