

**TECHNICAL DATA SHEET**

# Ball bearing steel type CR

**General notes:**

- » **ball bearing 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 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

## Composition

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

## Mechanical properties

Density	<b>7.85 g/cm<sup>3</sup></b>
Hardness, Rockwell	<b>65-68 HRC</b>
Tensile strength, ultimate	<b>2400 MPa</b>
0.2% Yield stress	<b>1800 MPa</b>
Elongation, break	<b>40%</b>
Modulus of elasticity	<b>212 GPa</b>

## Thermal properties

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

## Electrical properties

Resistivity	<b>0.30 E-4 Ohm.cm</b>
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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.

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