

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. % |
|-----------|-----------|-----------|-----------|-----------|-----------|
| 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 |
| Hardness, Rockwell | 65-68 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 |
|-------------|------------------------|

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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