

## Technical Datasheet: Carbon steel type C

### General Notes

- **Carbon steel** (Material number 1.1221, Ck60, AISI 1060)
- contains from 0,57-0,65 wt% carbon
- magnetizable
- will be hardened by heat treatment, max. hardness 57 HRC
- poor resistance to corrosion
- used where strength and/or hardness are of primary concern.
- typical applications include tweezers and cutting tools for the electronic industry, watch-makers, jewelers applications.

### Composition

| Component | Wt. %     | Component | Wt. %     | Component | Wt. % |
|-----------|-----------|-----------|-----------|-----------|-------|
| C         | 0.57-0.65 | Si        | 0,15-0,35 | Cr        | ≤0.4  |
| P         | ≤0.035    | S         | ≤0.035    |           |       |

### Mechanical properties:

|                             |                       |
|-----------------------------|-----------------------|
| State                       |                       |
| Density                     | 7.9 g/cm <sup>3</sup> |
| Hardness                    | 55-57 HRC             |
| Tensile strength, ultimate: | 850-1000 MPa          |
| 0.2% Yield stress           | 550 MPa               |
| Modulus of elasticity       | 200 GPa               |

### Thermal properties

|                                |               |            |
|--------------------------------|---------------|------------|
| Coef. of lin. therm expansion: | 11 E-6/°C     | 20°C-100°C |
| Coef. of lin. therm expansion: | 12 E-6/°C     | 20°C-300°C |
| Specific heat capacity:        | 0.502 J/(g·K) |            |
| Thermal conductivity:          | 52 W/(m·K)    |            |

### Electrical properties

|             |                 |
|-------------|-----------------|
| Resistivity | 0.18 E-4 Ohm.cm |
|-------------|-----------------|

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