

SIMOLD[™] 2311

TOOL STEEL

SIMOLD 2311 is a tool steel, characterised by good micro cleanliness, excellent polishability, good machinability, good temperature resistance, good dimensional stability and good wear resistance.

APPLICATIONS

- Matrix for machinery intended for die casting
- Moulds intended for plastic injection moulding, etc.

SPECIFICATIONS

SIMOLD 2311 is designated as DIN 40CrMnMo7 (Mat. No. 1.2311) and conforms to the following standards:

- EN 10029
- EN 10160 *
- SEP 1920
- EN 10163
- EN 10204
- DIN 50602 or ASTM E45 or ISO 4967 *
- ASTM E112 *

* Tested upon request.

CHEMICAL COMPOSITION – Typical values [mas.%]

SIMOLD 2311 is a martensitic steel alloyed with chromium, manganese and molybdenum with an extremely low sulphur and phosphorus content.

	C	Si	Mn	P	S	Cr	Ni	Cu	Al	Sn	Mo
Min.	0.35	0.30	1.40	—	—	1.80	—	—	—	—	0.15
Max.	0.45	0.40	1.60	0.008	0.001	2.10	0.65	0.30	0.02	0.025	0.25

PHYSICAL PROPERTIES

Density at 20 °C: 7830 kg/m³

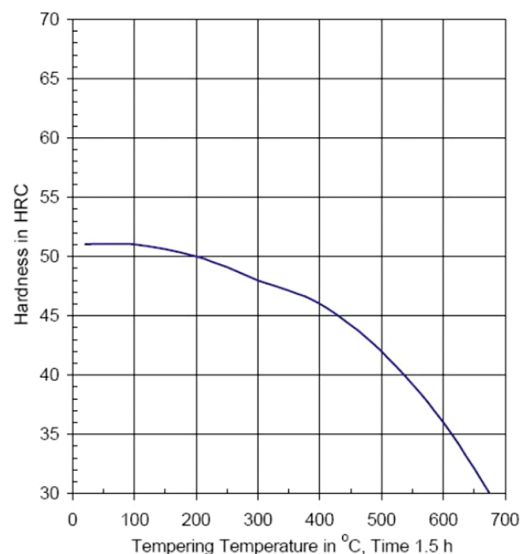
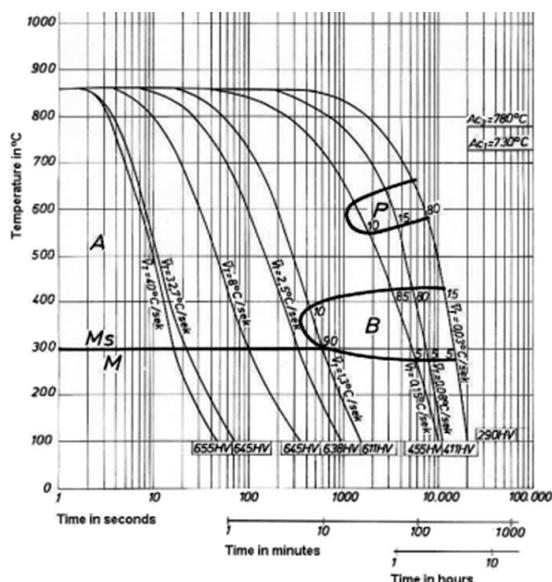
Modulus of elasticity: 210 MPa

MECHANICAL PROPERTIES

Quenched & tempered QT: 280–320 HB

HEAT TREATMENTS

Soft annealing	700–740 °C	Hardness HB after annealing: 230
Stress relief annealing	550–650 °C	
Hardening	830–880 °C/air	Hardness HRC after quenching: approx. 51
Tempering	1h/25 mm, min. 2 h	See tempering chart



SIZE OF CRYSTAL GRAINS

Size of crystal grains 5 to 8, according to ASTM E112

CLEANLINESS OF STEEL

- DIN 50602 method K1 max. 20
- ASTM E45 method A: thin max. B2–C2–D2 and thick max. B1.5–C1.5–D1.5
- ISO 4967

DELIVERY CONDITIONS

- QT (quenched + tempered) + shotblasted
- QT (quenched + tempered) + shotblasted + painted
- QT (quenched + tempered) + stress relieved

DIMENSIONS AND TOLERANCES

SIMOLD 2311	Thickness [mm]	Width [mm]	Length [mm]	Max. weight [kg]
Quarto plates	15–100	1000–2500	2000–12000	9600

- Thickness: according to EN 10029
- Flatness: according to EN 10029

INSPECTION DOCUMENTS

The type of document shall be agreed upon at the time of enquiry and order. A test certificate according to EN 10204/3.1 is issued mandatorily.

The information and data in this product data sheet are intended for informative purpose only and may be revised at any time without notice. Presented typical properties of the materials are described only to help readers make their own evaluations and decisions. They are not guaranteed.