



Sales Office:

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1.2344 (similar to AISI H13)

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Conventional melting (EF+LF+VD)

GENERAL:

- Uniform and high level of machinability and polishability
- High level of toughness and ductility
- Good resistance to abrasion at both low and high temperatures
- Excellent through-hardening properties
- Good high-temperature strength and resistance to thermal fatigue
- Very limited distortion during hardening.

APPLICATIONS:

Moulds for :

- for extrusion (dies, backers, dieholders, liners, stems, dummy blocks)
- plastic moulding applications (Injection moulding of thermoplastics and for higher surface requirements)
- severe cold punching, scrap shears, hot shearing, wear resisting parts

CHEMICAL ANALYSIS: %

C	Si	Mn	P	S	Cr	Mo	V
0,38 - 0,42	0,8 - 1,2	0,3 – 0,5	≤ 0,025	≤ 0,005	4,8 – 5,5	1,2 – 1,5	0,9 – 1,1

PHYSICAL PROPERTIES:

Coefficient of thermal expansion [10 ⁻⁶ m/(m x K)]	20-100 °C	20-200 °C	20-300 °C	20-400 °C	20-500 °C	20-600 °C	20-700 °C
	10.9	11.9	12.3	12.7	13.0	13.3	13.5
Thermal conductivity [W/(m x K)]	20° C		350° C		700° C		
	25.2		27.0		30.3		



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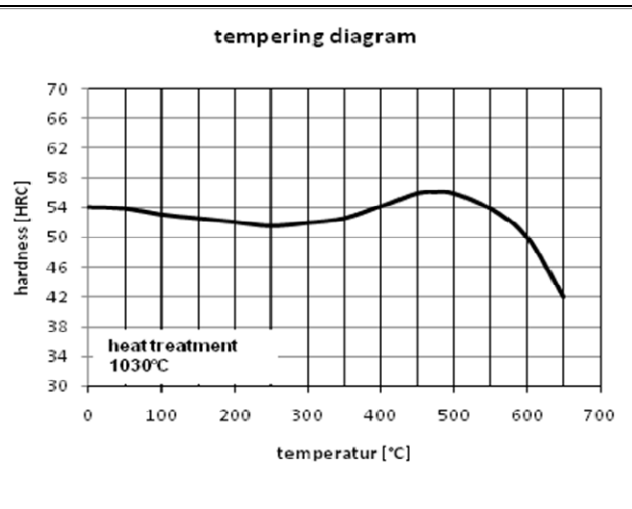
1.2344 (similar to AISI H 13)

HEAT TREATMENT:

<i>Hot forming</i>	<i>Soft annealing</i>	<i>Hardening</i>	<i>Tempering</i>
1050 – 850 °C	820 – 840 °C	1010 – 1050 °C	520 – 700 °C

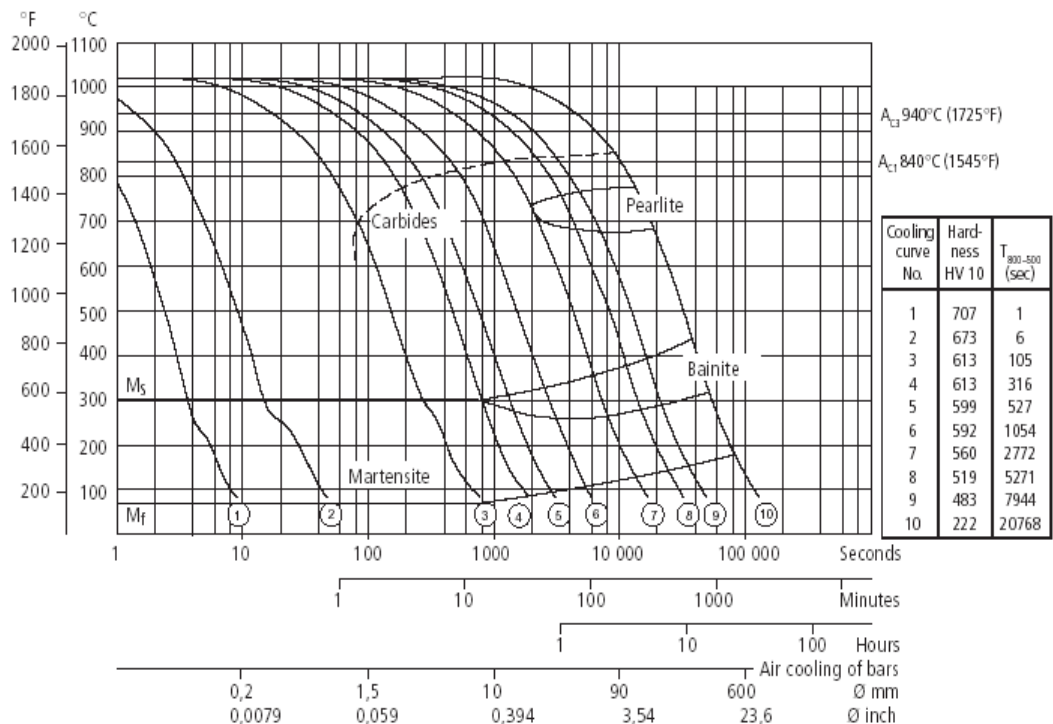
TEMPERING DIAGRAM:

values in HRC
 tested on samples dia. 25 x 50 mm long
 hardened at 1030 °C in oil



CCT GRAPH:

Austenitizing temperature 1020°C (1870°F). Holding time 30 minutes.



The details and values in this data sheet are typical values, no guarantee promises. Changes of the material, the qualities and/or performance data we reserve for us.



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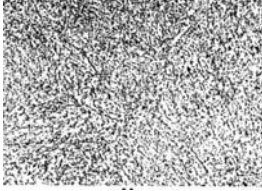

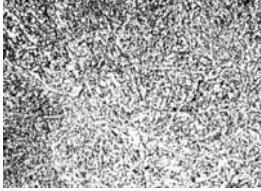
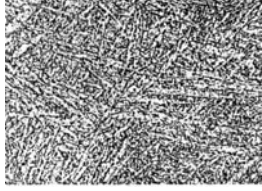
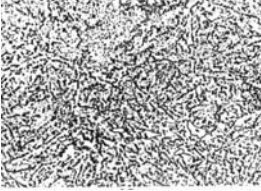
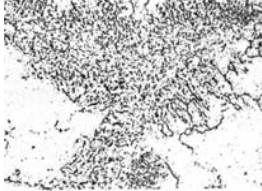
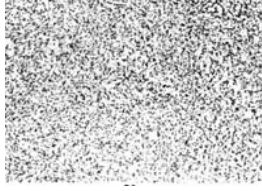

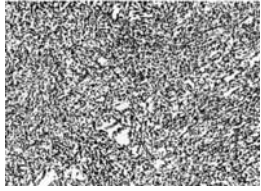
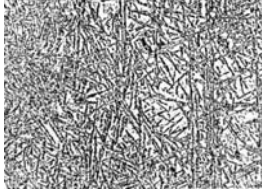
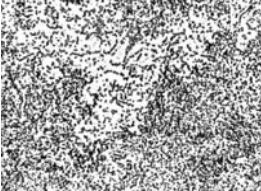
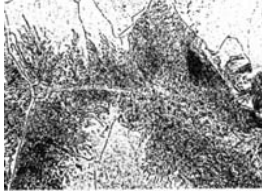

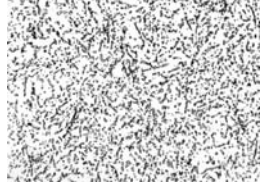


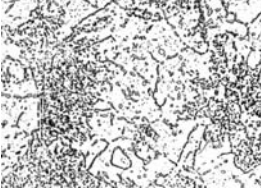
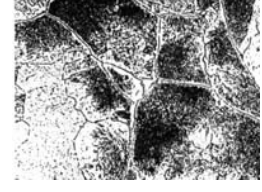






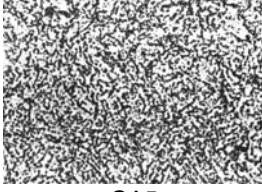
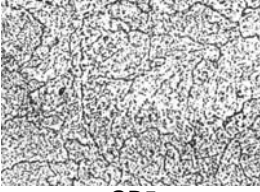
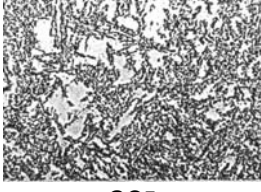



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DELIVERY CONDITION :
Soft annealed with a hardness of a maximum of 229HB or hardened and tempered acc. to your request
SERVICE HARDNESS:
30 – 56 HRC
IMPACT STRENGTH:
Unnotched test sample 10x7x55 [mm] VDG M82 Ed.02/1993 or SEP 1614 285 J/cm ² or acc. to your request
ULTRASONIC:
ASTM A388 - FBH max. 5 mm (1/5 inch) or SEP 1921 – test group 3 – class D , d or Acc. to your request
CLEANLINESS:
ASTM E45- Method A with type A ≤ 1,5 , B; C and D each ≤ 2 DIN 50602– K4 ≤ 20 acc. to your request
STRUCTURE:
Fine annealed structure See next page
DELIVERY SIZES:
Rounds – up to 600 mm Blocks – up to 500 mm thickness or acc. to your request

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Rating Chart for the Evaluation of Microstructure of Annealed Hot-Work Tool Steel

	GA	GB	GC	GD	GE	GF
1	 GA1	 GB1	 GC1	 GD1	 GE1	 GF1
2	 GA2	 GB2	 GC2	 GD2	 GE2	 GF2
3	 GA3	 GB3	 GC3	 GD3	 GE3	 GF3
4	 GA4	 GB4	 GC4	 GD4	 GE4	 GF4
5	 GA5	 GB5	 GC5	 GD5	 GE5	 GF5
—		—		---		
EFS geüht / EFS annealed		ESU bis 400 mm / ESR up to 400 mm		ESU bis 250 mm / ESR up to 250 mm		