

SPECIFICATIONS

European standards:

- 40NiSiCrMo7

BS : S 155

UNS : K44220

AMS : 6417 - 6419

AISI : 300M

COMPOSITION

Carbon.....	0.40
Nickel.....	1.80
Silicon.....	1.60
Chromium.....	0.85
Molybdenum.....	0.40

TYPICAL MECHANICAL PROPERTIES

- Annealed condition: heat to 780°C followed by slow cooling.
 - Brinell hardness: 240
- Oil quench from 870°C. Temper at 600°C.
 - UTS: 1450 N/mm²
 - 0.2 % Yield strength: 1300 N/mm²
 - Elongation (5d): 14 %
 - Impact strength KCU: 60 J/cm²

HEAT TREATMENT REFERENCE

- Oil quench from 870°C. Double temper at 300°C.
 - UTS: 2050 N/mm²
 - 0.2 % Yield strength: 1700 N/mm²
 - Elongation (5d): 12 %
 - Impact strength KCU: 50 J/cm²

APPLICATIONS

- Shafts.
- Gears.
- Various mechanical parts.
- Heavily stressed aerospace parts.

CHARACTERISTICS

- Melting: consumable electrode remelted steel.
- High mechanical properties.
- Good resistance to impact and fatigue.
- Maintains good properties at high temperatures.

HEAT TREATMENT

- Normalizing:
 - Heat to 925°C.
 - Air cool.
- Harden:
 - Heat to 870°C.
 - Oil quench.
- Temper:
 - Depending on properties required.

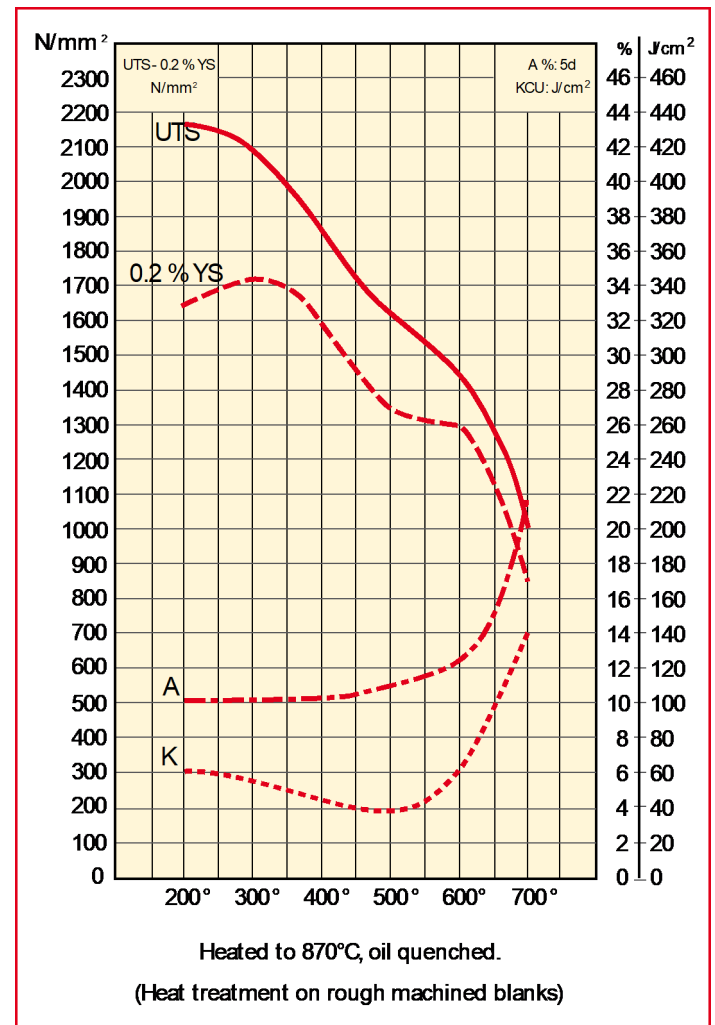
PHYSICAL PROPERTIES

- Density: 7.8
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 100°C: 11.5×10^{-6}
 - between 20°C and 700°C: 14.0×10^{-6}
- Critical points:
 - Ac 1: 725°C
 - Ac 3: 825°C

FORGING

- 1100/900°C

TEMPERING CURVE



Contact:

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The data provided in this document represent typical or average values rather than maximum or minimum guaranteed values. The applications indicated for the grades described are given as guidance only in order to help the reader in his personal assessment. Please note that these do not constitute a guarantee whether implicit or explicit as to whether the grade selected is suited to specific requirements. Aubert & Duval's liability shall not under any circumstances extend to product selection or to the consequences of that selection.