

SPECIFICATIONS

AIR : 12 NC 12

TYPICAL MECHANICAL PROPERTIES

- Annealed condition: heat to 825°C followed by slow cooling:
 - Brinell Hardness: 217
- Oil quench from 825/850 °C. Temper at 150°C (properties beneath the carburized layer)
 - UTS: 1150 N/mm²
 - 0.2 % Yield strength: 950 N/mm²
 - Elongation (5d): 14 %
 - Impact strength KCU: 120 J/cm²
- Water quench from 825/850°C. Temper at 575°C:
 - UTS: 850 N/mm²
 - 0.2 % Yield strength: 700 N/mm²
 - Elongation (5d): 19 %
 - Impact strength KCU: 150 J/cm²

COMPOSITION

Carbon.....	0.12
Nickel.....	3.30
Chromium.....	0.75

APPLICATIONS

- Carburized condition: shafts, pins, gears, etc.
- Non-carburized condition: Mechanical parts.

CHARACTERISTICS

- Carburizing and heat treatable nickel-chromium steel.
- After carburizing, hardening and tempering, the surface hardness is around 700 HV.

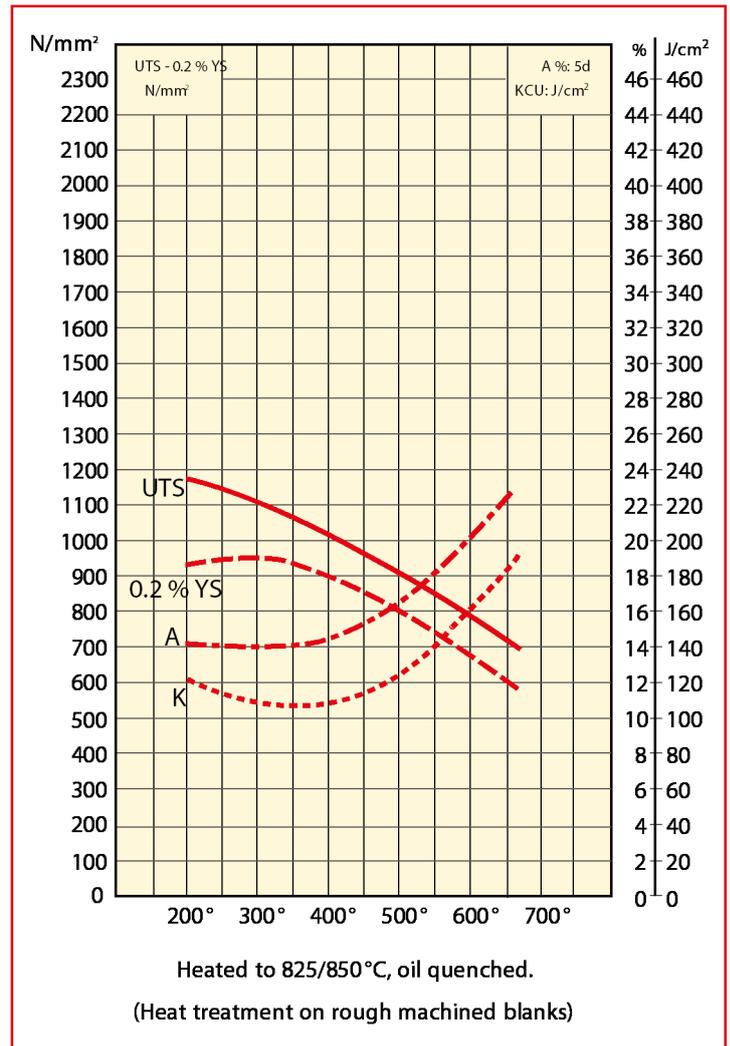
HEAT TREATMENT

- Carburizing:
 - 900°C approx.
- Harden:
 - Heat to 825/850°C.
 - Oil quench .
- Temper:
 - After carburizing and hardening, the steel is tempered between 140°C and 200°C as required. For use in the non carburized condition, temper in accordance with properties required.

PHYSICAL PROPERTIES

- Density: 7.8
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 100°C: 11.4×10^{-6}
 - between 20°C and 700°C: 13.6×10^{-6}
- Critical points:
 - Ac 1: 690°C
 - Ac 3: 815°C

TEMPERING CURVE



FORGING

- 1100/900°C

Contact:

www.aubertduval.com

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.