



SPECIFICATIONS

33NiCrMoV15

TYPICAL MECHANICAL PROPERTIES

HEAT TREATMENT REFERENCE

- Water quench from 875°C. Temper at 615°C:

- UTS:	1325 N/mm ²
- 0.2 % Yield strength:	1200 N/mm ²
- Elongation (5d):	14 %
- Impact strength KV -40°C	45 J

- Water quench from 875°C. Temper at 560°C:

- UTS:	1420 N/mm ²
- 0.2 % Yield strength:	1300 N/mm ²
- Elongation (5d):	11 %
- Impact strength KV -40°C	28 J

COMPOSITION

Carbon.....	0.33
Manganese.....	0.20
Chromium.....	1.40
Nickel.....	3.50
Molybdenum.....	0.50
Vanadium.....	0.20

APPLICATIONS

- Large caliber gun barrels and accessories (breech rings, breech blocks, muzzle brakes, etc...).
- Pressure vessels
- Mechanical parts in the range of YS 1200 to 1300 N/mm²

CHARACTERISTICS

- High mechanical characteristics
- Good impact strength at low temperature
- High hardenability in water and oil
- Good characteristics at high temperatures
- Good temper resistance.

HEAT TREATMENT

- Harden:
 - Heat to 850/875°C
 - Water or oil quench
- Temper:
 - Depending on properties required

PHYSICAL PROPERTIES

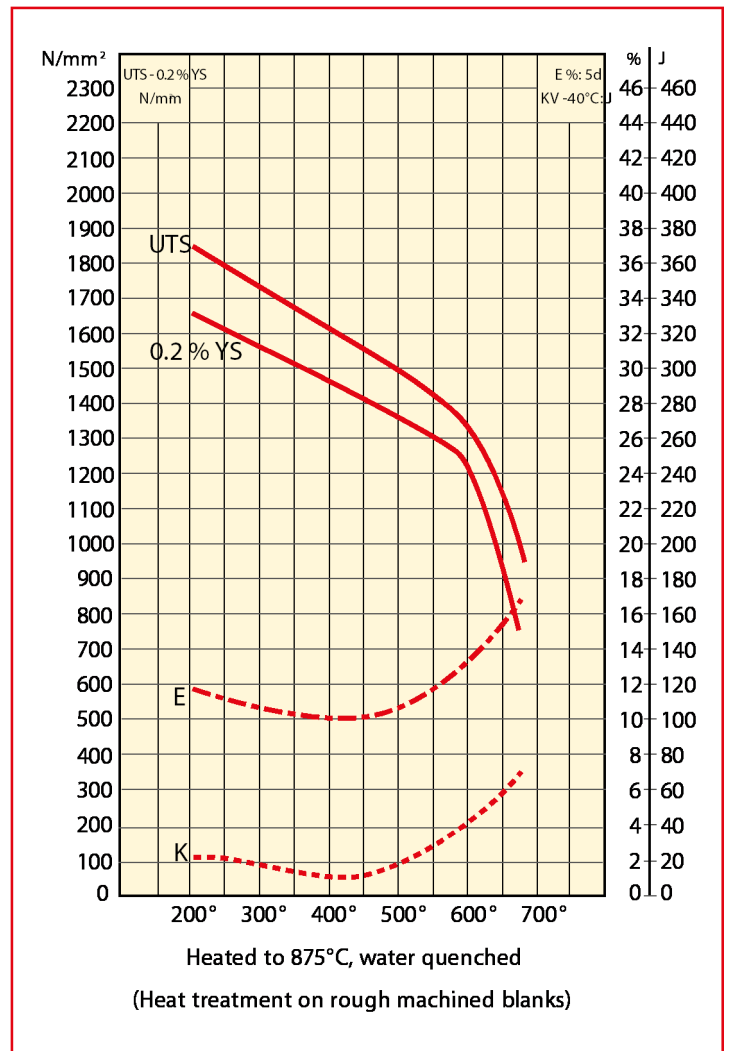
- Density: 7.85
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 200°C: 13.56×10^{-6}
 - between 20°C and 400°C: 14.48×10^{-6}
 - between 20°C and 650°C: 15.69×10^{-6}
- Critical points:
 - Ac 1: 700°C
 - Ac 3: 765°C
 - Ms: 310°C

FORGING

- 1150/850°C

Soft annealed to 660°C

TEMPERING CURVE



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.