

Variant:

GH4W: Consumable electrode remelted steel

SPECIFICATIONS

European standards:

- 40CrMoV13-9
- Numerical designation: 1.8523

AIR: 40CDV12

BS: S132, S134

For the remelted grade:

BS: S138

TYPICAL MECHANICAL PROPERTIES

- Annealed condition: Heat to 875°C followed by slow cooling:
 - Brinell Hardness: 217
- Oil quench from 900/930°C. Temper at 200°C:
 - UTS: 1950 N/mm²
 - 0.2 % Yield strength: 1450 N/mm²
 - Elongation (5d): 10 %
 - Impact strength KCU: 60 J/cm²

HEAT TREATMENT REFERENCE

- Oil quench from 900/930°C. Temper at 600°C:
 - UTS: 1400 N/mm²
 - 0.2 % Yield strength: 1150 N/mm²
 - Elongation (5d): 13 %
 - Impact strength KCU: 65 J/cm²

COMPOSITION

Carbon.....	0.40
Chromium.....	3.00
Molybdenum.....	1.00
Vanadium.....	0.20

APPLICATIONS

- This steel may be used to produce nitrided parts.
- Parts for the aerospace industry subjected to high stresses.
- This steel is mainly used at a tensile strength of 1400 N/mm².

CHARACTERISTICS

- High mechanical strength.
- High hardenability.
- For very thin parts or delicate shapes this grade may be air hardened.
- It may be nitrided in the heat treated condition to obtain a strength from 900 N/mm² to 1400 N/mm².

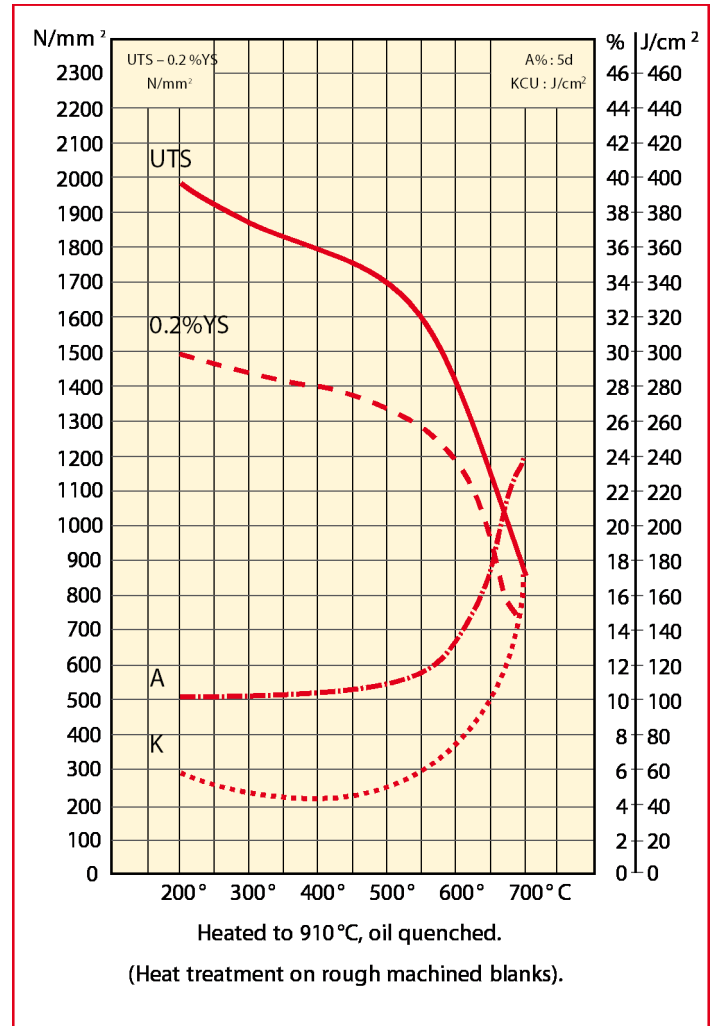
HEAT TREATMENT

- Harden:
 - Heat to 900/930°C
 - Oil quench.
- Temper:
 - According to properties required.
- Nitriding:
 - Surface hardness: approx. 800 Vickers.

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: 14.5×10^{-6}
- Critical points:
 - Ac 1: 795°C
 - Ac 3: 835°C

TEMPERING CURVE



FORGING

- 1150/1000°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.