

Variant:

GKPW: Consumable electrode rimelted steel

GKPYW: Vacuum induction melted and consumable electrode remelted steel

SPECIFICATIONS

32CrMoNiV5

AMS :6496

For the remelted grade:

UNS : K23280

AMS : 6497

For the vacuum melted and remelted grade:

AMS : 6498

TYPICAL MECHANICAL PROPERTIES

- Annealed condition: Heat to 875°C followed by slow cooling:
 - Brinell Hardness: 240
- Oil quench from 910/950°C. Temper at 600°C:
 - UTS: 1430 N/mm²
 - 0.2 % Yield strength: 1280 N/mm²
 - Elongation (5d): 14 %
 - Impact strength KV: 50 J

HEAT TREATMENT REFERENCE

- Oil quench from 910/950°C. Temper at 640°C:
 - UTS: 1250 N/mm²
 - 0.2 % Yield strength: 1075 N/mm²
 - Elongation (5d): 16 %
 - Impact strength KV: 80 J

COMPOSITION

Carbon	0.30
Chromium.....	1.40
Molybdenum.....	1.20
Nickel.....	0.80
Vanadium	0.30

APPLICATIONS

- GKP is used to produce nitrided parts which need to be extremely stable after hardening and tempering treatment.
- It is particularly suitable for deep nitriding.
- Gears, crankshafts, precision parts, aircraft parts.

CHARACTERISTICS

- Nitriding steel, with an excellent level of hardenability and particularly high mechanical properties, impact strength and fatigue limit.
- It may be nitrided in the heat treated condition with a core strength of 900 N/mm² to 1450 N/mm². The nitrided layer is not brittle.
- In comparison with other nitriding steels, GKP allows the nitriding process time to be reduced by up to 40 % for the same nitrided layer depth.
- With the same nitriding process time, GKP results in a depth gain of up to 0.2 mm. GKP makes it possible to obtain nitrided layers with a depth of 0.9 mm.

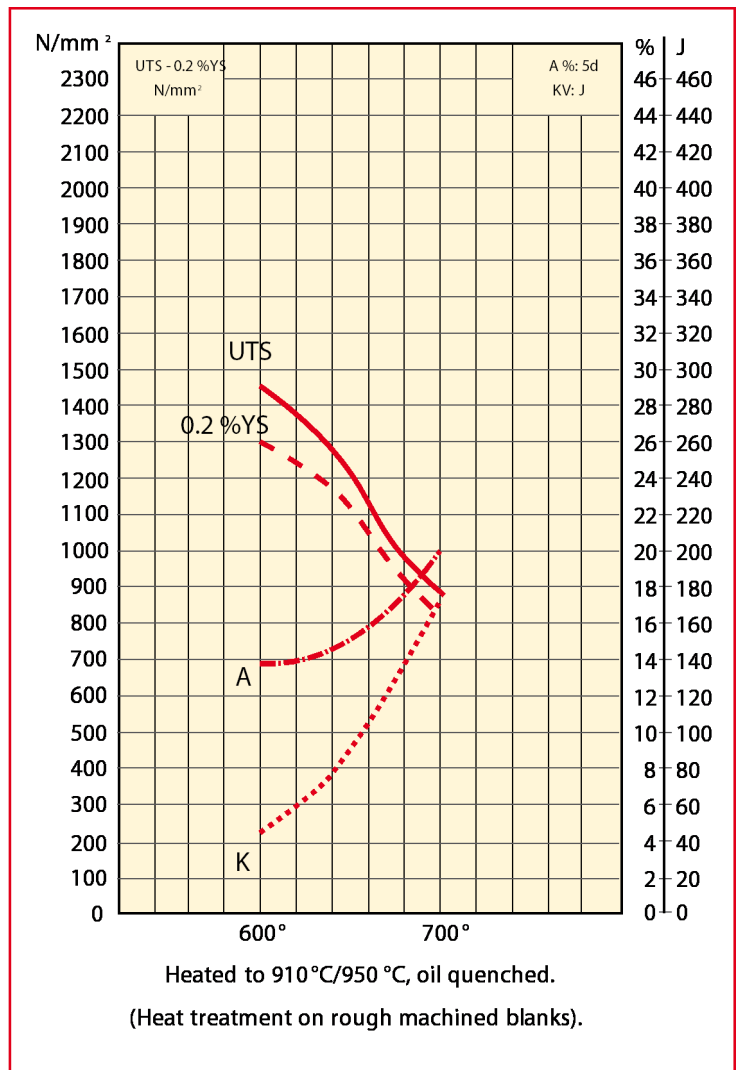
HEAT TREATMENT

- Harden:
 - Heat to 910/950°C
 - Oil quench.
- Temper:
 - Above 600°C depending on properties required.
- Nitriding:
 - Surface hardness: approx. 850 Vickers

PHYSICAL PROPERTIES

- Density: 7.8
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 100°C: 11.8×10^{-6}
 - between 20°C and 500°C: 13.6×10^{-6}
- Critical points:
 - Ac 1: 760°C
 - Ac 3: 850°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.