

SPECIFICATIONS

40SiNiCrMoV10

UNS : K54015

AMS : 6499

COMPOSITION

Carbon.....	0.40
Silicon.....	2.70
Nickel.....	1.75
Chromium.....	0.85
Molybdenum.....	0.40
Vanadium.....	0.20

TYPICAL MECHANICAL PROPERTIES

- Annealed condition: Heat to 955°C for 1 hour, transfer to a furnace at 700°C, hold at temperature for 24 hours followed by slow cooling:
 - Brinell Hardness: < 269

HEAT TREATMENT REFERENCE

- Oil quench from 920°C/940°C. Sub-zero treatment.
Double temper at 300°C:
 - UTS: 2150 N/mm²
 - 0.2 % Yield strength: 1790 N/mm²
 - Elongation (5d): 9 %
 - Reduction of area: 40 %
 - Toughness K1c: 52 MPavm

APPLICATIONS

- Main applications:
 - Torsion bars
 - Gears
 - Transmission shafts

CHARACTERISTICS

- This high strength steel is used for parts subject to high mechanical stresses and high fatigue stress.
- For applications in which parts are exposed to contact friction, NC310YW can be carburised.
- Its high tempering temperature (300°C) enables carburised components to be surface coated, and it can also be used at high working temperatures (>150°C).

HEAT TREATMENT

- Hardening:
 - Heat to 920°C/940°C.
 - Oil quench.
- Sub-zero treatment:
 - Cool to -75°C and hold for 4 hours. Please note that this process should not be carried out more than 4 hours after quenching.
- Double temper at 300°C

PHYSICAL PROPERTIES

- Density: 7.66
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 300°C: 13.6×10^{-6}
- Modulus of elasticity in N/mm²:
 - at 20°C: 202×10^3
- Critical points:
 - Ac 1: 780°C
 - Ac 3: 900°C

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.