



Steel

FADH

14NiCrMo13-4

Variants:

FADHW: Consumable electrode remelted steel

FADHYW: Vacuum induction melted and consumable electrode remelted steel

SPECIFICATIONS

European standards:

- 14NiCrMo13-4

- Numerical designation: 1.6657

AIR : 16 NCD 13

WL : 1.6657

BS : S 157

UNS : K43214

AMS : 6547

For the remelted grade:

WL : 1.6658

AMS : 6548

For the vacuum melted and remelted grade:

AMS : 6549

TYPICAL MECHANICAL PROPERTIES

- Annealed condition: heat to 825°C followed by slow cooling.
- Brinell Hardness: 217

HEAT TREATMENT REFERENCE

- Oil quench from 825°C. Sub-zero treatment (-70°C). Temper at 150°C.

(Properties beneath the carburized layer)

- UTS: 1350 N/mm²
- 0.2 % Yield strength: 1000 N/mm²
- Elongation (5d): 14 %
- Impact strength KV: 140 J

COMPOSITION

Carbon	0.16
Nickel	3.20
Chromium.....	1.00
Molybdenum.....	0.25

APPLICATIONS

- Various heavily stressed carburized and non carburized mechanical parts.
- Parts for the aerospace industry.

CHARACTERISTICS

- After carburizing, quenching and tempering, the surface hardness is around 700 HV.
- Good toughness of the carburized layer.
- High hardenability.
- Good mechanical properties.
- Good resistance to fatigue.

HEAT TREATMENT

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

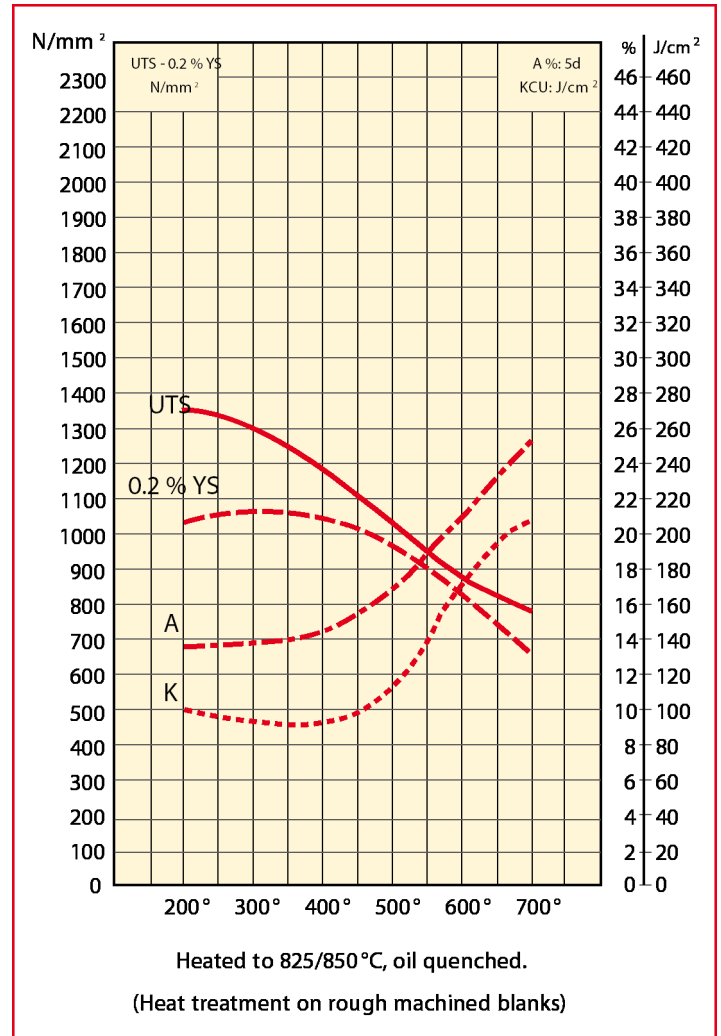
PHYSICAL PROPERTIES

- Density: 7.8
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 100°C: 11.3×10^{-6}
 - between 20°C and 700°C: 14.0×10^{-6}
- Critical points:
 - Ac 1: 690°C
 - Ac 3: 780°C

FORGING

- 1100/900°C

TEMPERATURE 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.