



## Steel

# FADS

## 16NiCrMo16-5

Variants:

FADSW: Consumable electrode remelted steel

FADSYW: Vacuum induction melted and consumable electrode remelted steel

## SPECIFICATIONS

European Standards:

- 16NiCrMo16-5

AIR : 16 NCD 17

WL : 1.6723

BS : S82

## 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  
Temper at 150°C
  - UTS: 1450 N/mm<sup>2</sup>
  - 0.2 % Yield strength: 1150 N/mm<sup>2</sup>
  - Elongation (5d): 12 %
  - Impact strength K CU: 90 J/cm<sup>2</sup>

## COMPOSITION

Carbon.....	0.16
Nickel .....	4.25
Chromium.....	1.20
Molybdenum.....	0.20

## APPLICATIONS

- Various carburized and non carburized mechanical parts subjected to high stresses
- Parts for the aerospace industry

## CHARACTERISTICS

- Good hardenability
- After carburizing, quenching and tempering, the surface hardness is around 700 HV.
- Good mechanical properties.

## HEAT TREATMENT

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

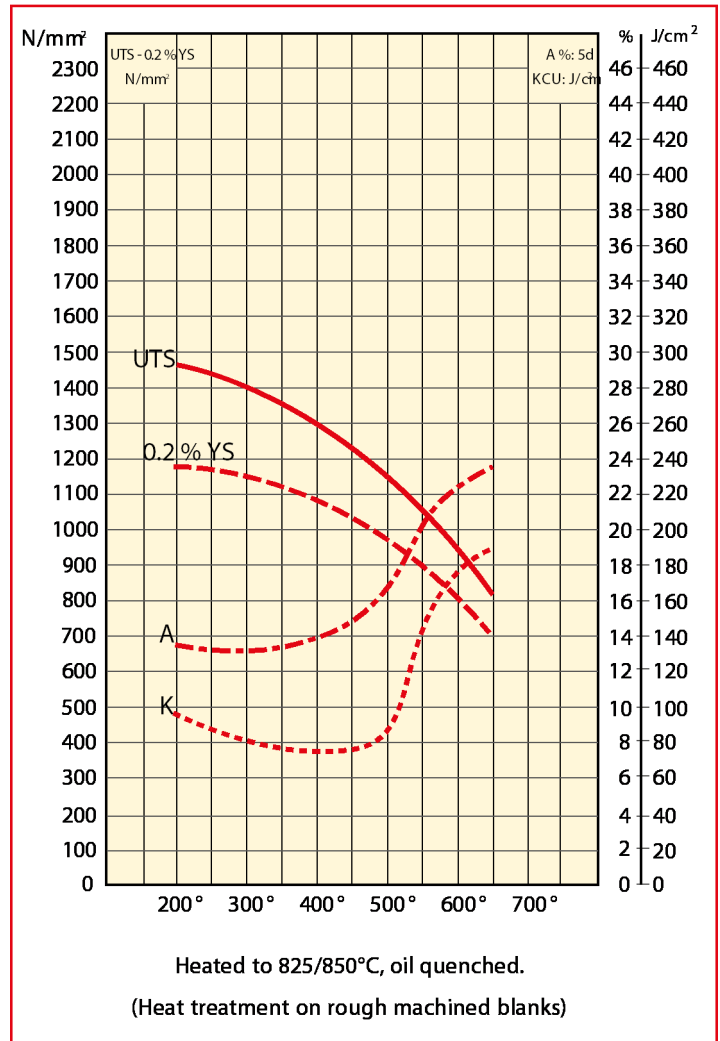
## PHYSICAL PROPERTIES

- Density: 7.8
- Mean coefficient of expansion in m/m.°C:
  - between 20°C and 200°C:  $11.5 \times 10^{-6}$
  - between 20°C and 400°C:  $12.4 \times 10^{-6}$
  - between 20°C and 600°C:  $13.5 \times 10^{-6}$
- Critical points:
  - Ac 1: 600°C
  - Ac 3: 800°C

## FORGING

- 1100/900°C

## TEMPERING CURVE



Contact :

[www.aubertduval.com](http://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.