

This page is mainly introduced the 42CrMo4 chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of 42CrMo4, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Data Table for Grades Stainless Steels 42CrMo4

| 42CrMo4 Standard Number: |                 |                                                                                                                                                         |
|--------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| ITEM                     | Standard Number | Descriptions                                                                                                                                            |
| 1                        | NF A 35-590     | Tool steels                                                                                                                                             |
| 2                        | NF EN 10083-1   | Steels for quenching and tempering - Part 1: General technical delivery conditions                                                                      |
| 3                        | NF EN 10083-3   | Steels for quenching and tempering - Part 3: Technical delivery conditions for alloy steels                                                             |
| 4                        | NF EN 10132-3   | Cold rolled narrow steel strip for heat treatment - Technical delivery conditions - Part 3: Steels for quenching and tempering                          |
| 5                        | NF EN 10250-3   | Open die steel forgings for general engineering purposes - Part 3: Alloy special steels                                                                 |
| 6                        | NF EN 10263-4   | Steel rod, bars and wire for cold heading and cold extrusion - Part 4: Technical delivery conditions for steels for quenching and tempering             |
| 7                        | NF EN 10269     | Steels and nickel alloys for fasteners with specified elevated and/or low temperature properties                                                        |
| 8                        | NF EN 10297-1   | Seamless circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 1: Non-alloy and alloy steel tubes |
| 9                        | NF EN 10305-1   | Steel tubes for precision applications - Technical delivery conditions - Part 1: Seamless cold drawn tubes                                              |
| 10                       | NF EN 10343     | Steels for quenching and tempering for construction purposes - Technical delivery conditions                                                            |

| 42CrMo4 Chemical composition(mass fraction)(wt.%) |         |         |
|---------------------------------------------------|---------|---------|
| Chemical                                          | Min.(%) | Max.(%) |
| C                                                 | 0.38    | 0.45    |
| Si                                                |         | 0.40    |
| Mn                                                | 0.60    | 0.90    |
| P                                                 |         | 0.035   |
| S                                                 |         | 0.035   |
| Cr                                                | 0.90    | 1.20    |
| Ni                                                |         |         |
| Mo                                                | 0.15    | 0.30    |

### 42CrMo4 Physical Properties

|                  |         |                          |
|------------------|---------|--------------------------|
| Tensile strength | 115-234 | $\sigma_b$ /MPa          |
| Yield Strength   | 23      | $\sigma_{0.2} \geq$ /MPa |
| Elongation       | 65      | $\delta 5 \geq$ (%)      |
| $\psi$           | -       | $\psi \geq$ (%)          |
| Akv              | -       | Akv $\geq$ /J            |
| HBS              | 123-321 | -                        |
| HRC              | 30      | -                        |

### 42CrMo4 Mechanical Properties

|                  |         |                          |
|------------------|---------|--------------------------|
| Tensile strength | 231-231 | $\sigma_b$ /MPa          |
| Yield Strength   | 154     | $\sigma_{0.2} \geq$ /MPa |
| Elongation       | 56      | $\delta 5 \geq$ (%)      |
| $\psi$           | -       | $\psi \geq$ (%)          |
| Akv              | -       | Akv $\geq$ /J            |
| HBS              | 235-268 | -                        |
| HRC              | 30      | -                        |

### 42CrMo4 Heat Treatment Regime

| Annealing | Quenching | Tempering | Normalizing | Q & T |
|-----------|-----------|-----------|-------------|-------|
| √         | √         | √         | √           | √     |

### 42CrMo4 Range of products

| Product type    | Products                                 | Dimension                  | Processes                                   | Deliver Status                                                |
|-----------------|------------------------------------------|----------------------------|---------------------------------------------|---------------------------------------------------------------|
| Plates / Sheets | Plates / Sheets                          | 0.08-200mm(T)*W*L          | Forging, hot rolling and cold rolling       | Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting |
| Steel Bar       | Round Bar, Flat Bar, Square Bar          | Φ8-1200mm*L                | Forging, hot rolling and cold rolling, Cast | Black, Rough Turning, Shot Blasting,                          |
| Coil / Strip    | Steel Coil /Steel Strip                  | 0.03-16.0x1200mm           | Cold-Rolled & Hot-Rolled                    | Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting |
| Pipes / Tubes   | Seamless Pipes/Tubes, Welded Pipes/Tubes | OD:6-219mm x WT:0.5-20.0mm | Hot extrusion, Cold Drawn, Welded           | Annealed, Solution and Aging, Q+T, ACID-WASHED                |

**We can produce Stainless Steels the specifications follows:**

**Note:**

- (1) listed in the table apex diameter (d), to steel thickness (a) multiples said.
- (2) in the ASTM A6 standard specified scope can meet any additional conditions.
- (3) from the standard for 50 mm (2 in).

**Mechanical properties****Mechanische Eigenschaften****Caracteristiques mecaniques**

ReH Minimum yield strength / Mindestwert der oberen Streckgrenze / Limite d'élasticite minimale

Rm Tensile strength / Zugfestigkeit / Resistance a la traction

A Minimum elongation / Mindestwert der Bruchdehnung / Allongement minimal

J Notch impact test / Kerbschlagbiegeversuch / Essai de flexion par choc

**Round bar:**

Diameter : 1mm-2000mm

**Square bar:**

Size: 50mm \* 50mm-600mm \*600mm

**Plate steel/flat bar:**

Size: Thickness: 0.1mm-800mm Width: 10mm to 1500mm

**Tube/pipe:**

Size: OD: 6-219mm WT: 1-35 mm.

Cold-rolled sheet: Thickness: 2-5mm Width:1000mm Length: 2000mm

Hot-rolled sheet: Thickness:6-80mm Width: 210-610mm

Length: We can supply any length based on the customer's requirement.

Forging/hot rolling/ extrusion of steel.

Forging: Shafts with flanks/pipes/tubes/slugs/donuts/cubes/other shapes

Finished goods condition: hot forging/hot rolling + annealing/normalizing + tempering/quenching + tempering/any conditions based on the customer's requirement

Surface conditions: scaled (hot working finish)/ground/rough machining/fine machining/based on the customer's requirement

Furnaces for metallurgical processing: electrode arc + LF/VD/VOD/ESR/Vacuum consumable electrode.

Ultrasonic inspection: 100% ultrasonic inspection for any imperfections or based on the customer's requirement.

UTS according to SEP 1921 C/c,D/d,E/e;A388 or GB/T 6402

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We serve you with our honesty, integrity, and professionalism.