

This page is mainly introduced the X6CrNiTi18-10 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of X6CrNiTi18-10, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Specialsteel X6CrNiTi18-10

| X6CrNiTi18-10 Standard Number: |                      |                                                                                                                                                                                        |
|--------------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ITEM                           | Standard Number      | Descriptions                                                                                                                                                                           |
| 1                              | NF EN 10028-7        | Flat products made of steels for pressure purposes - Part 7: Stainless steels                                                                                                          |
| 2                              | NF EN 10088-1        | Stainless steels - Part 1: List of stainless steels                                                                                                                                    |
| 3                              | NF EN 10088-2        | Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes                                                  |
| 4                              | NF EN 10088-3        | Stainless steels - Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes |
| 5                              | NF EN 10088-4        | Stainless steels - Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes                                             |
| 6                              | NF EN 10088-5        | Stainless steels - Part 5: Technical delivery conditions for bars, rods, wire, sections and bright products of corrosion resisting steels for construction purposes                    |
| 7                              | NF EN 10216-5 (2004) | Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 5: Stainless steel tubes                                                                             |
| 8                              | NF EN 10217-7        | Welded steel tubes for pressure purposes - Technical delivery conditions - Part 7: Stainless steel tubes                                                                               |
| 9                              | NF EN 10222-5        | Steel forgings for pressure purposes - Part 5: Martensitic, austenitic and austenitic-ferritic stainless steels                                                                        |
| 10                             | NF EN 10250-4        | Open die steel forgings for general engineering purposes - Part 4: Stainless steels                                                                                                    |
| 11                             | NF EN 10253-3        | Butt-welding pipe fittings - Part 3: Wrought austenitic and austenitic-ferritic (duplex) stainless steels without specific inspection requirements                                     |
| 12                             | NF EN 10253-4        | Butt-welding pipe fittings - Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements                                        |
| 13                             | NF EN 10263-5        | Steel rod, bars and steel wire for cold heading and cold extrusion - Part 5: Technical delivery conditions for stainless steels                                                        |
| 14                             | NF EN 10272          | Stainless steel bars for pressure purposes                                                                                                                                             |
| 15                             | NF EN 10296-2 (2005) | Welded circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel                                                  |
| 16                             | NF EN 10297-2 (2005) | Seamless circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel                                                |

## X6CrNiTi18-10 Chemical composition(mass fraction)(wt.%)

| Chemical |    |    |    | Min.(%) |    |    |    | Max.(%) |       |
|----------|----|----|----|---------|----|----|----|---------|-------|
| C        |    |    |    |         |    |    |    | 0.080   |       |
| Si       |    |    |    |         |    |    |    | 1.00    |       |
| Mn       |    |    |    |         |    |    |    | 2.00    |       |
| P        |    |    |    |         |    |    |    | 0.045   |       |
| S        |    |    |    |         |    |    |    | 0.015   |       |
| Cr       |    |    |    | 17.00   |    |    |    | 19.00   |       |
| Mo       |    |    |    |         |    |    |    |         |       |
| Ni       |    |    |    | 9.00    |    |    |    | 12.00   |       |
| Ti       |    |    |    | 5×C     |    |    |    | 0.70    |       |
| C        | Si | Mn | P  | S       | Cr | Ni | Mo | V       | Ta    |
|          |    |    |    |         |    |    |    |         |       |
| W        | N  | Cu | Co | Pb      | B  | Nb | Al | Ti      | Other |
|          |    |    |    |         |    |    |    |         |       |

Seamless circular steel tubes for mechanical and general engineering purposes - Technical

delivery conditions - Part 2: Stainless steel

## X6CrNiTi18-10 Physical Properties

|                  |         |                        |
|------------------|---------|------------------------|
| Tensile strength | 115-234 | σ <sub>b</sub> /MPa    |
| Yield Strength   | 23      | σ <sub>0.2</sub> ≥/MPa |
| Elongation       | 65      | δ <sub>5</sub> ≥ (%)   |
| ψ                | -       | ψ ≥ (%)                |
| Akv              | -       | Akv ≥/J                |

|     |         |   |
|-----|---------|---|
| HBS | 123-321 | - |
| HRC | 30      | - |

### X6CrNiTi18-10 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      | -                        |

### X6CrNiTi18-10 Heat Treatment Regime

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

### X6CrNiTi18-10 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 Specialsteel the specifications follows:**