

This page is mainly introduced the X5CrNi18-10 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of X5CrNi18-10, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Datasheet for Steel Grades Specialsteel X5CrNi18-10

| X5CrNi18-10 Standard Number: | | |
|------------------------------|-----------------------|--|
| ITEM | Standard Number | Descriptions |
| 1 | DIN 17440 (2001) | Stainless steels - Technical delivery conditions for drawn wire |
| 2 | DIN 17441 (1997) | Stainless steels - Technical delivery conditions for cold rolled strips and slit coils strip and sheets cut from such strips for pressure purposes |
| 3 | DIN 17455 (1985) | Welded circular tubes of stainless steels for general requirements; technical delivery conditions |
| 4 | DIN 17456 (1985) | Seamless circular tubes of stainless steels for general requirements; technical delivery conditions |
| 5 | DIN 17457 (1985) | Welded circular tubes of austenitic stainless steels for special requirements; technical delivery conditions |
| 6 | DIN 17458 (1985) | Seamless circular tubes of austenitic stainless steels for special requirements; technical delivery conditions |
| 7 | DIN 5512-3 | Materials for rail vehicles - Steels - Part 3: Stainless steel flat products; Selected standard |
| 8 | DIN EN 10028-7 | Flat products made of steels for pressure purposes - Part 7: Stainless steels |
| 9 | DIN EN 10088-1 | Stainless steels - Part 1: List of stainless steels |
| 10 | DIN EN 10088-2 | Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes |
| 11 | DIN 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 |
| 12 | DIN EN 10088-4 | Stainless steels - Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes |
| 13 | DIN 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 |
| 14 | DIN EN 10151 | Stainless steel strip for springs - Technical delivery conditions |
| 15 | DIN EN 10216-5 (2004) | Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 5: Stainless steel tubes |
| 16 | DIN EN 10217-7 | Welded steel tubes for pressure purposes - Technical delivery conditions - Part 7: Stainless steel tubes |
| 17 | DIN EN 10222-5 | Steel forgings for pressure purposes - Part 5: Martensitic, austenitic and austenitic-ferritic stainless steels |

| | | |
|----|-----------------------|--|
| 18 | DIN EN 10250-4 | Open die steel forgings for general engineering purposes - Part 4: Stainless steels |
| 19 | DIN EN 10253-3 | Butt-welding pipe fittings - Part 3: Wrought austenitic and austenitic-ferritic (duplex) stainless steels without specific inspection requirements |
| 20 | DIN EN 10253-4 | Butt-welding pipe fittings - Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements |
| 21 | DIN EN 10263-5 | Steel rod, bars and steel wire for cold heading and cold extrusion - Part 5: Technical delivery conditions for stainless steels |
| 22 | DIN EN 10264-4 (2002) | Steel wire and wire products - Steel wire for ropes - Part 4: Stainless steel wire |
| 23 | DIN EN 10269 | Steels and nickel alloys for fasteners with specified elevated and/or low temperature properties |
| 24 | DIN EN 10272 | Stainless steel bars for pressure purposes |
| 25 | DIN EN 10296-2 (2005) | Welded circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel |
| 26 | DIN EN 10297-2 (2005) | Seamless circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel |

X5CrNi18-10 Chemical composition (mass fraction) (wt.%)

| Chemical | | Min.(%) | | | | | Max.(%) | | | |
|----------|----|---------|----|----|----|----|---------|----|-------|--|
| C | | | | | | | 0.07 | | | |
| Si | | | | | | | 1.00 | | | |
| Mn | | | | | | | 2.00 | | | |
| P | | | | | | | 0.045 | | | |
| S | | | | | | | 0.015 | | | |
| Cr | | 17.0 | | | | | 19.0 | | | |
| Ni | | 8.00 | | | | | 10.5 | | | |
| N | | | | | | | 0.11 | | | |
| C | Si | Mn | P | S | Cr | Ni | Mo | V | Ta | |
| W | N | Cu | Co | Pb | B | Nb | Al | Ti | Other | |
| | | | | | | | | | | |

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

X5CrNi18-10 Physical Properties

| | | |
|------------------|---------|--------------------------|
| Tensile strength | 115-234 | σ_b /MPa |
| Yield Strength | 23 | $\sigma_{0.2} \geq$ /MPa |

| | | |
|------------|---------|---------------------|
| Elongation | 65 | $\delta 5 \geq$ (%) |
| ψ | - | $\psi \geq$ (%) |
| Akv | - | $Akv \geq J$ |
| HBS | 123-321 | - |
| HRC | 30 | - |

X5CrNi18-10 Mechanical Properties

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

X5CrNi18-10 Heat Treatment Regime

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

X5CrNi18-10 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 | $\Phi 8$ -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: