

This page is mainly introduced the X10CrNi18-8 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of X10CrNi18-8, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Specialsteel X10CrNi18-8

### X10CrNi18-8 Standard Number:

| ITEM | Standard Number       | Descriptions   |
|------|-----------------------|--|
| 1    | DIN EN 10088-1        | Stainless steels - Part 1: List of stainless steels  |
| 2    | DIN EN 10088-2        | Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes  |
| 3    | 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 |
| 4    | DIN EN 10151          | Stainless steel strip for springs - Technical delivery conditions  |
| 5    | DIN EN 10263-5        | Steel rod, bars and steel wire for cold heading and cold extrusion - Part 5: Technical delivery conditions for stainless steels  |
| 6    | DIN EN 10264-4 (2002) | Steel wire and wire products - Steel wire for ropes - Part 4: Stainless steel wire   |
| 7    | DIN EN 10270-3        | Steel wire for mechanical springs - Part 3: Stainless spring steel wire  |
| 8    | DIN EN 4528           | Aerospace series - Steel FE-PA3903 (X10CrNi18-8) - Cold rolled - Strip for springs - a = 3 mm - 1 250 MPa = Rm = 1 640 MPa   |

### X10CrNi18-8 Chemical composition(mass fraction)(wt.%)

| Chemical |    | Min.(%) |   | Max.(%) |    |    |    |   |    |
|----------|----|---------|---|---------|----|----|----|---|----|
| C        |    | 0.05    |   | 0.12    |    |    |    |   |    |
| Si       |    |         |   | 2.00    |    |    |    |   |    |
| Mn       |    |         |   | 2.00    |    |    |    |   |    |
| P        |    |         |   | 0.045   |    |    |    |   |    |
| S        |    |         |   | 0.015   |    |    |    |   |    |
| Cr       |    | 16.0    |   | 19.0    |    |    |    |   |    |
| Ni       |    | 6.00    |   | 9.50    |    |    |    |   |    |
| Mo       |    |         |   | 0.80    |    |    |    |   |    |
| 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 1: List of stainless steels

### X10CrNi18-8 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      | -                        |

### X10CrNi18-8 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      | -                        |

### X10CrNi18-8 Heat Treatment Regime

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

### X10CrNi18-8 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, | Φ8-1200mm*L       | Forging, hot rolling and              | Black, Rough Turning,   |

|               |  |                            |                                   |   |
|---------------|--|----------------------------|-----------------------------------|---|
|               | Square Bar                               |                            | cold rolling, Cast                | 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:**