

This page is mainly introduced the X5CrNi18-9 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of X5CrNi18-9, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Specialsteel X5CrNi18-9

| X5CrNi18-9 Standard Number: |                     |   |
|-----------------------------|---------------------|---|
| ITEM                        | Standard Number     | Descriptions  |
| 1                           | ISO 16143-1 (2004)  | Stainless steels for general purposes -- Part 1: Flat products  |
| 2                           | ISO 16143-2 (2004)  | Stainless steels for general purposes -- Part 2: Semi-finished products, bars, rods and sections  |
| 3                           | ISO 16143-3 (2005)  | Stainless steels for general purposes -- Part 3: Wire   |
| 4                           | ISO 6931-2          | Stainless steels for springs - Part 2: Narrow strip   |
| 5                           | ISO 9327-5          | Steel forgings and rolled or forged bars for pressure purposes - Technical delivery conditions - Part 5: Stainless steels                     |
| 6                           | ISO 9328-5          | Steel plates and strips for pressure purposes - Technical delivery conditions - Part 5: Weldable fine grain steels, thermomechanically rolled |
| 7                           | ISO 9329-4          | Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 4: Austenitic stainless steels                              |
| 8                           | ISO 9330-6          | Welded steel tubes for pressure purposes - Technical delivery conditions - Part 6: Longitudinally welded austenitic stainless steel tubes     |
| 9                           | ISO/TS 15510 (2003) | Stainless steels - Chemical composition   |

| X5CrNi18-9 Chemical composition(mass fraction)(wt.%) |    |         |   |   |    |         |    |   |    |
|--|----|---------|---|---|----|---------|----|---|----|
| Chemical   |    | Min.(%) |   |   |    | Max.(%) |    |   |    |
| C  |    |         |   |   |    | 0.07    |    |   |    |
| Si   |    |         |   |   |    | 1.00    |    |   |    |
| Mn   |    |         |   |   |    | 2.00    |    |   |    |
| P  |    |         |   |   |    | 0.045   |    |   |    |
| S  |    |         |   |   |    | 0.030   |    |   |    |
| Cr   |    | 17.00   |   |   |    | 19.00   |    |   |    |
| Mo   |    | 8.00    |   |   |    | 11.00   |    |   |    |
| Ni   |    |         |   |   |    |         |    |   |    |
| C  | Si | Mn      | P | S | Cr | Ni      | Mo | V | Ta |

|   |   |    |    |    |   |    |    |    |       |
|---|---|----|----|----|---|----|----|----|-------|
|   |   |    |    |    |   |    |    |    |       |
| W | N | Cu | Co | Pb | B | Nb | Al | Ti | Other |
|   |   |    |    |    |   |    |    |    |       |

Stainless steels - Chemical composition

### X5CrNi18-9 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      | -                        |

### X5CrNi18-9 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      | -                        |

### X5CrNi18-9 Heat Treatment Regime

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

### X5CrNi18-9 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:**