

This page is mainly introduced the 1Cr18Ni9 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of 1Cr18Ni9, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Specialsteel 1Cr18Ni9

| 1Cr18Ni9 Standard Number: |                   |  |
|---------------------------|-------------------|--|
| ITEM                      | Standard Number   | Descriptions   |
| 1                         | GB 13296 (2007)   | Seamless stainless steel tubes for boiler and heat exchanger     |
| 2                         | GB 2270 (1980)    | Seamless tubes   |
| 3                         | GB 5310 (1999)    | Seamless steel tubes and pipes for high pressure boiler          |
| 4                         | GB/T 1220 (1992)  | Stainless steel bars   |
| 5                         | GB/T 12770 (2002) | Welded stainless steel tubes for machine structures              |
| 6                         | GB/T 12771 (2000) | Welded stainless steel pipes for liquid delivery                 |
| 7                         | GB/T 14975 (2002) | Stainless steel seamless tubes for structures                    |
| 8                         | GB/T 14976 (2002) | Stainless steel seamless tubes for fluid transport               |
| 9                         | GB/T 18705 (2002) | Welded stainless steel pipes for decoration                      |
| 10                        | GB/T 3280 (2007)  | Cold rolled stainless steel sheets and plates                    |
| 11                        | GB/T 4226 (2004)  | Cold finished stainless steel bars                               |
| 12                        | GB/T 4237 (1992)  | Hot rolled stainless steel sheets and plates                     |
| 13                        | GB/T 4239 (1991)  | Cold rolled stainless steel and heat resisting steel strips      |
| 14                        | GB/T 4240 (1993)  | Stainless steel wires  |
| 15                        | GB/T 4356 (2002)  | Stainless steel wire rods  |
| 16                        | JB/T 6398 (2006)  | Heavy stainless acid resistant and heat resistant steel forgings |

| 1Cr18Ni9 Chemical composition(mass fraction)(wt.%) |         |         |
|--|---------|---------|
| Chemical   | Min.(%) | Max.(%) |
| C  |         | 0.15    |
| Si   |         | 1.00    |
| Mn   |         | 2.00    |
| P  |         | 0.035   |
| S  |         | 0.030   |
| Ni   | 8.00    | 10.00   |

|    |    |    |       |    |    |    |       |    |       |  |
|----|----|----|-------|----|----|----|-------|----|-------|--|
| Cr |    |    | 17.00 |    |    |    | 19.00 |    |       |  |
| C  | Si | Mn | P     | S  | Cr | Ni | Mo    | V  | Ta    |  |
| W  | N  | Cu | Co    | Pb | B  | Nb | Al    | Ti | Other |  |
|    |    |    |       |    |    |    |       |    |       |  |

## 1Cr18Ni9

### 1Cr18Ni9 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      | -                        |

### 1Cr18Ni9 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      | -                        |

### 1Cr18Ni9 Heat Treatment Regime

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

### 1Cr18Ni9 Range of products

| Product type    | Products        | Dimension         | Processes                | Deliver Status         |
|-----------------|-----------------|-------------------|--------------------------|------------------------|
| Plates / Sheets | Plates / Sheets | 0.08-200mm(T)*W*L | Forging, hot rolling and | Annealed, Solution and |

|               |  |                            |   |   |
|---------------|--|----------------------------|---|---|
|               |  |                            | cold rolling                                | 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:**