

This page is mainly introduced the 316S51 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of 316S51, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Datasheet for Steel Grades Specialsteel 316S51

316S51 Standard Number:

| ITEM | Standard Number | Descriptions |
|------|-----------------|---|
| 1 | BS 1501-3 | Steels for pressure purposes. Specification for corrosion- and heat-resisting steels: plates, sheet and strip |
| 2 | BS 1502 | Specification for steels for fired and unfired pressure vessels: sections and bars |
| 3 | BS 1503 | Specification for steel forgings for pressure purposes |
| 4 | BS 1506 | Specification for carbon, low alloy and stainless steel bars and billets for bolting material to be used in pressure retaining applications |
| 5 | BS 3059-2 | Steel boiler and superheater tubes. Specification for carbon, alloy and austenitic stainless steel tubes with specified elevated temperature properties |
| 6 | BS 3605-1 | Austenitic stainless steel pipes and tubes for pressure purposes. Specification for seamless tubes |

316S51 Chemical composition(mass fraction)(wt.%)

| Chemical | | Min.(%) | | Max.(%) | | | | | |
|----------|----|---------|----|---------|----|----|----|----|-------|
| C | | 0.04 | | 0.10 | | | | | |
| Si | | | | 1.00 | | | | | |
| Mn | | | | 2.00 | | | | | |
| P | | | | 0.04 | | | | | |
| S | | | | 0.03 | | | | | |
| Cr | | 16.50 | | 18.50 | | | | | |
| Mo | | 2.00 | | 2.50 | | | | | |
| Ni | | 10.50 | | 13.50 | | | | | |
| C | Si | Mn | P | S | Cr | Ni | Mo | V | Ta |
| W | N | Cu | Co | Pb | B | Nb | Al | Ti | Other |
| | | | | | | | | | |

Austenitic stainless steel pipes and tubes for pressure purposes. Specification for seamless tubes

316S51 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 | - |

316S51 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 | - |

316S51 Heat Treatment Regime

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

316S51 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: