

This page is mainly introduced the Alloy 59 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of Alloy 59, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Datasheet for Steel Grades Superalloys Alloy 59

| Alloy 59 Standard Number: | | |
|---------------------------|-----------------|---|
| ITEM | Standard Number | Descriptions |
| 1 | DIN EN 17744 | The chemically stable and high-temperature resistant nickel and cobalt alloy 2.4605 (alloy 59) is mainly used in the chemical industry, flue gas desulphurating plants, paper industry. |

| Alloy 59 Chemical composition (mass fraction) (wt.%) | | | | | | | | | |
|--|----|---------|----|----|----|---------|----|----|-------|
| Chemical | | Min.(%) | | | | Max.(%) | | | |
| C | | | | | | 0.01 | | | |
| Si | | | | | | 0.10 | | | |
| Mn | | | | | | 0.50 | | | |
| P | | | | | | 0.025 | | | |
| S | | | | | | 0.015 | | | |
| Cr | | 22.00 | | | | 24.00 | | | |
| Ni | | | | | | Bal | | | |
| Al | | 0.10 | | | | 0.40 | | | |
| Co | | | | | | 0.30 | | | |
| Cu | | | | | | 0.50 | | | |
| Fe | | | | | | 1.50 | | | |
| C | Si | Mn | P | S | Cr | Ni | Mo | V | Ta |
| W | N | Cu | Co | Pb | B | Nb | Al | Ti | Other |
| | | | | | | | | | |

The chemically stable and high-temperature resistant nickel and cobalt Alloy 59 is mainly used in the chemical industry, flue gas desulphurating plants, paper industry.

Our product range in Alloy 59 are tubes and pipes, fittings and flanges,

accessories.

Alloy 59 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 | - |

Alloy 59 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 | - |

Alloy 59 Heat Treatment Regime

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

Alloy 59 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 Superalloys the specifications follows: