

This page is mainly introduced the HS 25 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of HS 25, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Superalloys HS 25

| HS 25 Standard Number: |                 |   |
|------------------------|-----------------|---|
| ITEM                   | Standard Number | Descriptions  |
| 1                      | AMS 5796        | Cobalt Alloy, Corrosion and Heat-Resistant, Welding Wire, 52Co - 20Cr - 10Ni - 15W              |
| 2                      | AMS 5759        | Cobalt Alloy, Corrosion and Heat-Resistant, Bars, Forgings, and Rings, 52Co - 20Cr - 10Ni - 15W |

| HS 25 Chemical composition (mass fraction) (wt.%) |    |    |    |         |    |    |    |         |       |  |
|---|----|----|----|---------|----|----|----|---------|-------|--|
| Chemical  |    |    |    | Min.(%) |    |    |    | Max.(%) |       |  |
| C   |    |    |    | 0.05    |    |    |    | 0.15    |       |  |
| P   |    |    |    |         |    |    |    | 0.40    |       |  |
| Mn  |    |    |    | 1.00    |    |    |    | 2.00    |       |  |
| S   |    |    |    |         |    |    |    | 0.03    |       |  |
| Si  |    |    |    |         |    |    |    | 0.40    |       |  |
| Cr  |    |    |    | 19.00   |    |    |    | 21.00   |       |  |
| Ni  |    |    |    | 9.00    |    |    |    | 11.00   |       |  |
| Co  |    |    |    |         |    |    |    | Bal     |       |  |
| Fe  |    |    |    |         |    |    |    | 3.0     |       |  |
| W   |    |    |    | 14.00   |    |    |    | 16.00   |       |  |
| C   | Si | Mn | P  | S       | Cr | Ni | Mo | V       | Ta    |  |
|   |    |    |    |         |    |    |    |         |       |  |
| W   | N  | Cu | Co | Pb      | B  | Nb | Al | Ti      | Other |  |
|   |    |    |    |         |    |    |    |         |       |  |

Haynes 25™ has an excellent temperature strength and oxidation resistance to 2000 °F. Haynes 25™ is hot formable between 1900 °F-2300 °F. Also known as Alloy L605, it is better to cold-work Haynes 25™ for bending, spinning and drawing the components. HS 25

### HS 25 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      | -                        |

### HS 25 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      | -                        |

### HS 25 Heat Treatment Regime

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

### HS 25 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:**