

This page is mainly introduced the F1091 R30605 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of F1091 R30605, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Superalloys F1091 R30605

### F1091 R30605 Standard Number:

| ITEM | Standard Number | Descriptions                                                                                                       |
|------|-----------------|--------------------------------------------------------------------------------------------------------------------|
| 1    | F 1091 (2012)   | Standard Specification for Wrought Cobalt-20Chromium-15Tungsten-10Nickel Alloy Surgical Fixation Wire (UNS R30605) |

### F1091 R30605 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 |  |
|          |  |    |  |    |  |    |  |    |  |         |  |    |  |    |         |    |  |       |  |

Standard Specification for Wrought  
 Cobalt-20Chromium-15Tungsten-10Nickel Alloy Surgical Fixation Wire  
 (UNS R30605)

### F1091 R30605 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      | -                        |

### F1091 R30605 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      | -                        |

### F1091 R30605 Heat Treatment Regime

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

### F1091 R30605 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:**