

This page is mainly introduced the A 965 S21904 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of A 965 S21904, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Specialsteel A 965 S21904

### A 965 S21904 Standard Number:

| ITEM | Standard Number     | Descriptions  |
|------|---------------------|---|
| 1    | A 965/A 965M (2012) | Steel Forgings, Austenitic, for Pressure and High Temperature Parts |

### A 965 S21904 Chemical composition (mass fraction) (wt.%)

| Chemical |    | Min.(%) |    | Max.(%) |    |    |    |    |       |
|----------|----|---------|----|---------|----|----|----|----|-------|
| C        |    |         |    | 0.04    |    |    |    |    |       |
| Si       |    |         |    | 1.00    |    |    |    |    |       |
| Mn       |    | 8.00    |    | 10.0    |    |    |    |    |       |
| P        |    |         |    | 0.06    |    |    |    |    |       |
| S        |    |         |    | 0.03    |    |    |    |    |       |
| Cr       |    | 19.0    |    | 21.5    |    |    |    |    |       |
| Ni       |    | 5.50    |    | 7.50    |    |    |    |    |       |
| N        |    | 0.15    |    | 0.40    |    |    |    |    |       |
| C        | Si | Mn      | P  | S       | Cr | Ni | Mo | V  | Ta    |
| W        | N  | Cu      | Co | Pb      | B  | Nb | Al | Ti | Other |
|          |    |         |    |         |    |    |    |    |       |

### A 965 S21904

### A 965 S21904 Physical Properties

|                  |         |                 |
|------------------|---------|-----------------|
| Tensile strength | 115-234 | $\sigma_b$ /MPa |
|------------------|---------|-----------------|

|                |         |                                  |
|----------------|---------|----------------------------------|
| Yield Strength | 23      | $\sigma_{0.2} \geq / \text{MPa}$ |
| Elongation     | 65      | $\delta 5 \geq (\%)$             |
| $\psi$         | -       | $\psi \geq (\%)$                 |
| Akv            | -       | $Akv \geq / \text{J}$            |
| HBS            | 123-321 | -                                |
| HRC            | 30      | -                                |

### A 965 S21904 Mechanical Properties

|                  |         |                                  |
|------------------|---------|----------------------------------|
| Tensile strength | 231-231 | $\sigma_b / \text{MPa}$          |
| Yield Strength   | 154     | $\sigma_{0.2} \geq / \text{MPa}$ |
| Elongation       | 56      | $\delta 5 \geq (\%)$             |
| $\psi$           | -       | $\psi \geq (\%)$                 |
| Akv              | -       | $Akv \geq / \text{J}$            |
| HBS              | 235-268 | -                                |
| HRC              | 30      | -                                |

### A 965 S21904 Heat Treatment Regime

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

### A 965 S21904 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          | $\Phi 8$ -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:**