

This page is mainly introduced the X7CrNiAl17-7 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of X7CrNiAl17-7, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Specialsteel X7CrNiAl17-7

### X7CrNiAl17-7 Standard Number:

| ITEM | Standard Number | Descriptions   |
|------|-----------------|--|
| 1    | BS EN 10088-1   | Stainless steels - Part 1: List of stainless steels  |
| 2    | BS EN 10088-2   | Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes  |
| 3    | BS EN 10088-3   | Stainless steels - Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes |
| 4    | BS EN 10088-4   | Stainless steels - Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes   |
| 5    | BS EN 10088-5   | Stainless steels - Part 5: Technical delivery conditions for bars, rods, wire, sections and bright products of corrosion resisting steels for construction purposes                    |
| 6    | BS EN 10151     | Stainless steel strip for springs - Technical delivery conditions  |
| 7    | BS EN 10270-3   | Steel wire for mechanical springs - Part 3: Stainless spring steel wire  |

### X7CrNiAl17-7 Chemical composition(mass fraction)(wt.%)

| Chemical | Min.(%) | Max.(%) |   |   |    |    |    |   |    |
|----------|---------|---------|---|---|----|----|----|---|----|
| C        |         | 0.09    |   |   |    |    |    |   |    |
| Si       |         | 0.70    |   |   |    |    |    |   |    |
| Mn       |         | 1.00    |   |   |    |    |    |   |    |
| P        |         | 0.04    |   |   |    |    |    |   |    |
| S        |         | 0.015   |   |   |    |    |    |   |    |
| Cr       | 16.00   | 18.00   |   |   |    |    |    |   |    |
| Ni       | 6.50    | 7.80    |   |   |    |    |    |   |    |
| Mo       |         |         |   |   |    |    |    |   |    |
| Al       | 0.70    | 1.50    |   |   |    |    |    |   |    |
| C        | Si      | Mn      | P | S | Cr | Ni | Mo | V | Ta |
|          |         |         |   |   |    |    |    |   |    |

| W | N | Cu | Co | Pb | B | Nb | Al | Ti | Other |
|---|---|----|----|----|---|----|----|----|-------|
|   |   |    |    |    |   |    |    |    |       |

## Steel wire for mechanical springs - Part 3: Stainless spring steel wire

### X7CrNiAl17-7 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      | -                        |

### X7CrNiAl17-7 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      | -                        |

### X7CrNiAl17-7 Heat Treatment Regime

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

### X7CrNiAl17-7 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 Specialsteel the specifications follows:**