

This page is mainly introduced the 5642 Type 2 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of 5642 Type 2, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Specialsteel 5642 Type 2

| 5642 Type 2 Standard Number: |                      |  |
|------------------------------|----------------------|--|
| ITEM                         | Standard Number      | Descriptions   |
| 1                            | SAE AMS 5642K (2006) | Steel, Corrosion and Heat-Resistant, Bars, Wire, and Forgings 18Cr - 10.5Ni - 0.60Cb Free-Machining, Solution Heat Treated |

| 5642 Type 2 Chemical composition(mass fraction)(wt.%) |    |         |    |    |    |           |    |    |       |
|---|----|---------|----|----|----|-----------|----|----|-------|
| Chemical  |    | Min.(%) |    |    |    | Max.(%)   |    |    |       |
| C   |    |         |    |    |    | 0.22      |    |    |       |
| Si  |    |         |    |    |    | 0.40      |    |    |       |
| Mn  |    |         |    |    |    | 0.75      |    |    |       |
| P   |    |         |    |    |    |           |    |    |       |
| S   |    |         |    |    |    |           |    |    |       |
| Ni  |    |         |    |    |    | 0.75      |    |    |       |
| Cr  |    |         |    |    |    | 12.50     |    |    |       |
| Al  |    |         |    |    |    |           |    |    |       |
| Cu  |    |         |    |    |    |           |    |    |       |
| Ti  |    |         |    |    |    |           |    |    |       |
| Fe  |    |         |    |    |    | remaining |    |    |       |
| N   |    |         |    |    |    |           |    |    |       |
| Mo  |    |         |    |    |    | 1.00      |    |    |       |
| W   |    |         |    |    |    | 1.00      |    |    |       |
| V   |    |         |    |    |    | 0.22      |    |    |       |
| C   | Si | Mn      | P  | S  | Cr | Ni        | Mo | V  | Ta    |
| W   | N  | Cu      | Co | Pb | B  | Nb        | Al | Ti | Other |
|   |    |         |    |    |    |           |    |    |       |

Steel, Corrosion and Heat-Resistant, Bars, Wire, and Forgings 18Cr - 10.5Ni - 0.60Cb Free-

Machining, Solution Heat Treated

### 5642 Type 2 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      | -                        |

### 5642 Type 2 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      | -                        |

### 5642 Type 2 Heat Treatment Regime

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

| 5642 Type 2 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:**