

**This page is mainly introduced the GH1140 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of GH1140, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.**

## Datasheet for Steel Grades Specialsteel GH1140

| GH1140 Standard Number: |                   |   |
|-------------------------|-------------------|---|
| ITEM                    | Standard Number   | Descriptions  |
| 1                       | GB/T 14992 (2005) | Classification and designation for superalloys and high temperature intermetallic materials |
| 2                       | GB/T 14995 (2010) | Hot-rolled superalloy sheets  |
| 3                       | GB/T 14996 (2010) | Cold-Rolled heat-resisting superalloy sheets  |
| 4                       | GB/T 14998 (1994) | Heat-resisting superalloy blanks for forged rings   |
| 5                       | GB/T 15062 (2008) | Superalloy tube for general application   |

| GH1140 Chemical composition(mass fraction)(wt.%) |    |         |    |    |         |    |    |    |       |
|--|----|---------|----|----|---------|----|----|----|-------|
| Chemical   |    | Min.(%) |    |    | Max.(%) |    |    |    |       |
| C  |    | 0.06    |    |    | 0.12    |    |    |    |       |
| Cr   |    | 20.0    |    |    | 23.0    |    |    |    |       |
| Mo   |    | 2.00    |    |    | 2.50    |    |    |    |       |
| Ni   |    | 35.0    |    |    | 40.0    |    |    |    |       |
| W  |    | 1.40    |    |    | 1.80    |    |    |    |       |
| Al   |    | 0.20    |    |    | 0.60    |    |    |    |       |
| Ti   |    | 0.70    |    |    | 1.20    |    |    |    |       |
| Si   |    | 0.80    |    |    | 0.70    |    |    |    |       |
| P  |    |         |    |    | 0.025   |    |    |    |       |
| S  |    |         |    |    | 0.015   |    |    |    |       |
| Ce   |    |         |    |    | 0.05    |    |    |    |       |
| C  | Si | Mn      | P  | S  | Cr      | Ni | Mo | V  | Ta    |
| W  | N  | Cu      | Co | Pb | B       | Nb | Al | Ti | Other |
|  |    |         |    |    |         |    |    |    |       |

## GH1140

### GH1140 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      | -                        |

### GH1140 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      | -                        |

### GH1140 Heat Treatment Regime

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

### GH1140 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:**