

**This page is mainly introduced the HR240 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of HR240, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.**

## Datasheet for Steel Grades Specialsteel HR240

| HR240 Standard Number: |                   |  |
|------------------------|-------------------|--|
| ITEM                   | Standard Number   | Descriptions   |
| 1                      | BS HR 240 (1972)  | Specification for cobalt-chromium-tungsten-nickel-manganese heat-resisting alloy plate, sheet and strip (cobalt base Cr 20, W 15, Ni 10, Mn 1.5) |
| 2                      | BS 2HR 240 (2011) | Specification for cobalt-chromium-tungsten-nickel-manganese heat-resisting alloy plate, sheet and strip (cobalt base Cr 20, W 15, Ni 10, Mn 1.5) |

| HR240 Chemical composition(mass fraction)(wt.%) |    |         |    |    |    |           |    |    |       |  |
|---|----|---------|----|----|----|-----------|----|----|-------|--|
| Chemical  |    | Min.(%) |    |    |    | Max.(%)   |    |    |       |  |
| C   |    | 0.05    |    |    |    | 0.15      |    |    |       |  |
| Si  |    |         |    |    |    | 0.40      |    |    |       |  |
| Mn  |    | 1.00    |    |    |    | 2.00      |    |    |       |  |
| P   |    |         |    |    |    | 0.040     |    |    |       |  |
| S   |    |         |    |    |    | 0.030     |    |    |       |  |
| Cr  |    | 19.00   |    |    |    | 21.00     |    |    |       |  |
| Ni  |    | 9.00    |    |    |    | 11.00     |    |    |       |  |
| Mo  |    |         |    |    |    |           |    |    |       |  |
| Co  |    |         |    |    |    | remaining |    |    |       |  |
| Ti  |    |         |    |    |    |           |    |    |       |  |
| Fe  |    |         |    |    |    | 3.00      |    |    |       |  |
| 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 |  |
|   |    |         |    |    |    |           |    |    |       |  |

Specification for cobalt-chromium-tungsten-nickel-manganese heat-resisting alloy plate, sheet

and strip (cobalt base Cr 20, W 15, Ni 10, Mn 1.5)

### HR240 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      | -                        |

### HR240 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      | -                        |

### HR240 Heat Treatment Regime

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

| HR240 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:**