

This page is mainly introduced the S44020 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of S44020, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Special Steel S44020

| S44020 Standard Number: |                     |   |
|-------------------------|---------------------|---|
| ITEM                    | Standard Number     | Descriptions  |
| 1                       | A 582/A 582M (2012) | Martensitic Chromium Free Machining Stainless Steel |

| S44020 Chemical composition (mass fraction) (wt.%) |    |         |    |    |    |         |    |    |       |
|--|----|---------|----|----|----|---------|----|----|-------|
| Chemical   |    | Min.(%) |    |    |    | Max.(%) |    |    |       |
| C  |    | 0.95    |    |    |    | 1.20    |    |    |       |
| Mn   |    |         |    |    |    | 1.25    |    |    |       |
| Si   |    |         |    |    |    | 1.00    |    |    |       |
| P  |    |         |    |    |    | 0.04    |    |    |       |
| S  |    | 0.10    |    |    |    | 0.35    |    |    |       |
| Cr   |    | 16.00   |    |    |    | 18.00   |    |    |       |
| Ni   |    |         |    |    |    | 0.75    |    |    |       |
| Mo   |    | 0.40    |    |    |    | 0.60    |    |    |       |
| N  |    |         |    |    |    | 0.08    |    |    |       |
| C  | Si | Mn      | P  | S  | Cr | Ni      | Mo | V  | Ta    |
| W  | N  | Cu      | Co | Pb | B  | Nb      | Al | Ti | Other |
|  |    |         |    |    |    |         |    |    |       |

Martensitic Chromium Free Machining Stainless Steel

### S44020 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      | -                        |

### S44020 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      | -                        |

### S44020 Heat Treatment Regime

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

| S44020 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:**