

## Material: ASTM A582 Type 420F

### Standard Specification for Free-Machining Stainless Steel Bars

**Group:** Ferrous Stainless Steel Alloys

**Sub Group:** ASTM A582 Type 420F Free-Machining Stainless Steel Bars

**Application:** Intended for Valve, Pump, General Engineering, Automotive and Other Industries

**Grade Belongs to the Industry:** Bar and Forging

| Chemical Composition |      |                 | Heat Treatment                     |          |
|----------------------|------|-----------------|------------------------------------|----------|
| Carbon               | C %  | 0.300 - 0.400   | Annealing or Hardening + Tempering |          |
| Silicon              | Si % | 1.000 max.      |                                    |          |
| Manganese            | Mn % | 1.250 max.      |                                    |          |
| Phosphorus           | P %  | 0.060 max.      |                                    |          |
| Sulphur              | S %  | 0.150 min.      |                                    |          |
| Chromium             | Cr % | 12.000 - 14.000 |                                    |          |
| Nickel               | Ni % | 0.050 max.      |                                    |          |
| Copper               | Cu % | 0.600 max.      |                                    |          |
| Iron                 | Fe % | Balance         |                                    |          |
| -                    | -    | -               | Mechanical Properties              |          |
| -                    | -    | -               | Tensile Strength in Mpa            | 690 min. |
| -                    | -    | -               | Yield Strength in Mpa              | 485 min. |
| -                    | -    | -               | Elongation in %                    | 12 min.  |
| -                    | -    | -               | Reduction of Area in %             | -        |
| -                    | -    | -               | Hardness in HB                     | 262 max. |
| -                    | -    | -               | Impact in Joule                    | -        |

| Cross Reference Table |          |         |                               |
|-----------------------|----------|---------|-------------------------------|
| Material              | Standard | Country | Grade Belong to the Industry  |
| 420F                  | AISI     | USA     | Bar, Wire, Shapes and Forging |
| A895 Type 420F        | ASTM     | USA     | Plate, Sheet and Strip        |
| A959 Type 420F        | ASTM     | USA     | Bar, Wire, Shapes and Forging |
| J9154                 | UNS      | USA     | Casting                       |
| SUS 420F              | JIS      | Japan   | Bar and Forging               |
| S 42020               | UNS      | USA     | Casting                       |
| A743 CA40F            | ASTM     | USA     | Casting                       |

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