

## Material: ASTM A 479 S20161

### Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and for General Applications

**Group:** Ferrous Stainless Steel Alloys

**Sub Group:** ASTM A 479 S20161 Chromium and Chromium-Nickel Stainless Steel for Pressure Vessels and for General Applications

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

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

| Chemical Composition |      |                 | Heat Treatment          |          |
|----------------------|------|-----------------|-------------------------|----------|
| Carbon               | C %  | 0.150 max.      | Solution Annealing      |          |
| Silicon              | Si % | 3.000 - 4.000   |                         |          |
| Manganese            | Mn % | 4.000 - 6.000   |                         |          |
| Phosphorus           | P %  | 0.045 max.      |                         |          |
| Sulphur              | S %  | 0.030 max.      |                         |          |
| Chromium             | Cr % | 15.000 - 18.000 |                         |          |
| Nickel               | Ni % | 4.000 - 6.000   |                         |          |
| Nitrogen             | N %  | 0.080 - 0.200   |                         |          |
| Iron                 | Fe % | Balance         |                         |          |
| -                    | -    | -               | Mechanical Properties   |          |
| -                    | -    | -               | Tensile Strength in Mpa | 860 min. |
| -                    | -    | -               | Yield Strength in Mpa   | 345 min. |
| -                    | -    | -               | Elongation in %         | 40 min.  |
| -                    | -    | -               | Reduction of Area in %  | 40 min.  |
| -                    | -    | -               | Hardness in HB          | 311 max. |
| -                    | -    | -               | Impact in Joule         | -        |

| Cross Reference Table |          |         |                               |
|-----------------------|----------|---------|-------------------------------|
| Material              | Standard | Country | Grade Belong to the Industry  |
| A240 UNS S20161       | ASTM     | USA     | Steel, Plate, Sheet and Strip |
| S20161                | UNS      | USA     | Steel                         |
| A276 S20161           | ASTM     | USA     | Steel, Bar and Shapes         |
| A959 S20161           | ASTM     | USA     | Steel                         |
| SA-240 UNS S20161     | ASME     | USA     | Steel                         |
| SA-276 S20161         | ASME     | USA     | Steel, Bar and Shapes         |
| SA-479 UNS S20161     | ASME     | USA     | Steel and Bar                 |

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