

# Material: ASME SA-479 UNS 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:** ASME SA-479 UNS 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 |      |                 |
|----------------------|------|-----------------|
| Carbon               | C %  | 0.150 max.      |
| Silicon              | Si % | 3.000 - 4.000   |
| Manganese            | Mn % | 4.000 - 6.000   |
| Phosphorus           | P %  | 0.045 max.      |
| Sulphur              | S %  | 0.040 max.      |
| Chromium             | Cr % | 15.000 - 18.000 |
| Nickel               | Ni % | 4.000 - 6000    |
| Nitrogen             | N %  | 0.080 - 0.200   |
| Iron                 | Fe % | Balance         |
| -                    | -    | -               |
| -                    | -    | -               |
| -                    | -    | -               |
| -                    | -    | -               |
| -                    | -    | -               |
| -                    | -    | -               |
| -                    | -    | -               |

| Heat Treatment          |          |
|-------------------------|----------|
| Solution Annealing      |          |
| 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          | 255 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         |
| A479 S20161           | ASTM     | USA     | Steel and Bar                 |
| A959 S20161           | ASTM     | USA     | Steel                         |
| SA-240 UNS S20161     | ASME     | USA     | Steel                         |
| SA-276 S20161         | ASME     | USA     | Steel, Bar and Shapes         |

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