

## MATERIAL DATASHEET

### Alloy 304 Stainless Steel

UNS: S30400  
EN-DIN: 1.4301

Industries supplied include: Process equipment in mining, chemical, cryogenic, food, dairy, and pharmaceutical industries. 304 grade stainless has excellent welding and formability characteristics and is one of the most utilized stainless steels.

#### Nominal Composition

|     | C   | Mn  | P     | S     | Si   | Cr   | Ni   | N    | Fe  |  |  |
|-----|-----|-----|-------|-------|------|------|------|------|-----|--|--|
| min | -   | -   | -     | -     | -    | 17.5 | 8.0  | -    | -   |  |  |
| max | .07 | 2.0 | 0.045 | 0.030 | 0.75 | 19.5 | 10.5 | 0.10 | BAL |  |  |

#### Physical Properties

|                           | At 70°F  | At 20°C                   |
|---------------------------|--|---------------------------|
| Density                   | 0.29 lb./in <sup>3</sup>                             | 8.03 g/cm <sup>3</sup>    |
| Modulus of Elasticity (E) | 28.0 x 10 <sup>3</sup> ksi                           | 193 x 10 <sup>3</sup> MPa |
| Coefficient of Expansion  | 9.4 x 10 <sup>-6</sup> microinches/in.-°F (70-600°F) | 16.9 μm/m-°C (20-300°C)   |
| Electrical Resistivity    | 28.4 μ ohm.in  | 72 μ ohm.cm               |
| Thermal Conductivity      | 9.4 Btu-in./ft. <sup>2</sup> hr.-°F                  | 16.2 W/m-K                |

#### Applicable Specifications

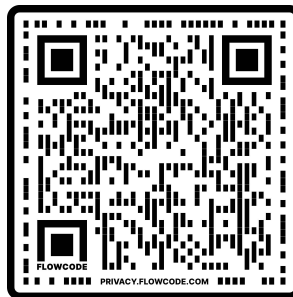
AMS 5513, ASTM A313, ASTM A240, ASTM A580, ASTM A 666

#### Typical Mechanical Properties – Typical Room Temperature Mechanical Properties

| Condition | Tensile Strength (UTS) | 0.2% YS           | Elongation% in 2" (50.8 mm) | Hardness Rockwell |
|-----------|------------------------|-------------------|-----------------------------|-------------------|
| Annealed  | 95 ksi ( 655 MPa)      | 42 ksi ( 290 MPa) | 55                          | 84 HRBW           |

Typical mechanical properties are based on ASTM A240

\*Tempered Properties available upon request\*



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