



Hamilton Precision Metals
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TECHNICAL DATA SHEET

SS 410

SS 410 is a heat treatable martensitic chromium stainless steel. Melt practice is controlled to develop a surface nearly free from defects. It provides the best combination of wear resistance and corrosion resistance, and is used in demanding medical accessories.

NOMINAL COMPOSITION:

| | | | |
|-----------|-------|--------|---------|
| Chromium | 11.8% | Nickel | .20% |
| Manganese | .40% | Carbon | .14% |
| Silicon | .30% | Iron | Balance |

TYPICAL MECHANICAL PROPERTIES:¹

| | ANNEALED | COLD ROLLED | HEAT TREATED |
|---------------------------------|--------------------------|-------------|--------------|
| Ultimate Tensile Strength | 75,000 PSI | 110,000 PSI | 220,000 PSI |
| Yield Strength (.2% Offset) | 45,000 PSI | 80,000 PSI | 170,000 PSI |
| Elongation in 2" * | 25% | 10% | 5% |
| Hardness (DPH – 1000 Grams) | 200 | 200 | 450 |
| Modulus of Elasticity (Tension) | 29 X 10 ⁶ PSI | | |
| Poisson's Ratio | 0.24 | | |

*The measured elongation will be less as thicknesses decreases to .002" and less.

¹ These values may be adjusted by control of process variables – consult HPM for desired values.

SS 410

PHYSICAL PROPERTIES:²

| | | |
|-------------------------------------------------|---|----------------------------|
| Density | - | 7750 KG/m ³ |
| Melting Point (Approx.) | - | 1460°C |
| Electrical Resistivity @ R.T. | - | 57 Microhm· cm |
| Thermal Expansion Coefficient (0° to 100° C) | - | 9.9 x 10 ⁻⁶ /°C |
| Thermal Conductivity @ 100° C | - | 25.0 W/m· K |
| Magnetic Attraction | - | Yes |

GENERAL INFORMATION:

The alloy can be cold formed from the annealed temper. Welding should be accomplished by pre and post heating. Pre-heating at 450° F and post-heated at 1300°F will prevent cracking. The corrosion resistance is optimized in the heat-treated temper and assured by passivation. It is resistant to water and organic materials. Oxidation resistance remains favorable in most applications up through 1200°F.

AVAILABILITY:

SS 410 is available from Hamilton Precision Metals as strip product from .001” to .060” in widths up to 12.0” The material conforms to UNS S41000.

² Typical values to guide alloy selection but are not a guarantee of minimum or maximum.