

410 Stainless Steel Annealed

Grade 410 stainless steel annealed—also known as 410 SS annealed—is a viable material solution for applications where some corrosion resistance is necessary, but wear resistance is critical.

It is a general-purpose martensitic stainless steel alloy containing 11.5% chromium that demonstrates—in addition to superior wear resistance and good corrosion resistance to hot gases, steam, food, mild acids, freshwater, dry air, and alkalis—scaling resistance up to 650° C. The material is commonly used in the construction of automotive parts, medical instruments, nozzles, pipelines, and valves.

Properties of 410 SS Annealed

Similar to other stainless steel alloys, 410 SS annealed's exact material composition determines the properties it exhibits. The composition and physical and mechanical properties of the material are as follows:

Composition

The percentages of the various chemical elements present in 410 SS annealed (the remaining balance being iron) include:

1 Carbon: 0.080–0.150%	2 Chromium: 11.50–13.50%	3 Manganese: 1.0% (max.)
4 Phosphorus: 0.04% (max.)	5 Silicon: 1.00% (max.)	6 Sulfur: 0.030% (max.)

Physical Properties

The physical properties of 410 annealed SS include:

Density: 0.28 lbs/in ³ ; 7.74 g/cm ³	Specific Heat: 0.11 BTU/lb·°F (32–212° F); 0.46 J/kg·°K (0–100° C)
Modulus of Elasticity: 29.0 x 10 ⁶ psi (200 GPa)	Thermal Conductivity @ 200° F (100° C): 14.4 BTU/hr·ft ² /ft ² ·°F (24.9 W/m ² ·K)
Melting Range: 2700–2790° F (1480–1530° C)	Electrical Resistivity: 22.50 Microhm·cm at 68° C; 57 Microhm·cm at 20° C

Mechanical Properties

The mechanical properties of 410 annealed stainless steel at a mean temperature of 68° F (20° C) include:

Yield Strength 0.2% Offset: 42,000 psi (290 MPa)	Ultimate Tensile Strength: 74,000 psi (510 MPa)
Elongation in 2 in.: 34%	Hardness: 96 Rb max

Fabrication Data of 410 Stainless Steel Annealed

410 stainless steel annealed is suitable for use in a variety of fabrication operations, such as:



Applications of 410 Stainless Steel Annealed

410 stainless steel annealed finds application in the manufacture of a wide range of parts and products. Common applications where this alloy is the fabrication material of choice include:



At Bergsen Metals, we provide high-quality stainless steel suitable for use in a wide range of industrial applications. To learn more about 410 annealed stainless steel and other material offerings or request a quote for pricing on our materials.



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