



310 – Grade 310, combining excellent high temperature properties with good ductility and weldability, is designed for high temperature service. It resists oxidation in continuous service at temperatures up to 1150°C provided reducing sulphur gases are not present. It is also used for intermittent service at temperatures up to 1040°C. Applications for molten salt, sulfur bearing gas and heat exchanger and recuperator tubing.

316 – 316 is the 2nd most common stainless after 304 and is commonly used in food and surgical applications. The addition of moly prevents specific forms for corrosion. By keeping the carbon at .03% max, it has been shown to minimize carbide precipitation during welding. Decreasing the sulfur will enhance its ability for electro-polishing. It is also known as a marine grade due to the increased resistance to chloride corrosion in comparison to 304. It is generally used in marine applications and watches, pharmaceutical equipment, valve bodies, bleaching and dyeing equipment or the textile and food industry.

317 – 317 is a molybdenum-bearing austenitic chrome nickel similar to 316 except the alloy content is higher. It was developed primarily to more effectively resist the attack of sulfurous acid compounds.

321 – this is titanium bearing stainless and it is stabilized against carbide precipitation. In higher temperatures the carbon combines with the titanium to form a harmless titanium carbide leaving the chrome to maintain full corrosion resistance. 321 is basically 304 modified by adding titanium in an amount at least 5 times the carbon plus nitrogen contents.

347 – 347 is a columbium/tantalum stabilized austenitic ss. Similar to 321, it has good intergranular-corrosion compared to typical 18-8 type alloys. It is widely used in aircraft exhausts, expansion joints and in high temperature chemical processing. It is resistant to atmospheric conditions and should be considered for applications requiring intermittent heating between 800F and 1650f.

410 – 410 is a hardenable martensitic alloy that is designed for high stress parts that require high ductility as well as good corrosion resistance. Working temps up to 1200F are acceptable. 410 is widely used in blades and buckets, steam turbines, turbine wheels, valves, aircraft parts and pumps and pump shafts.

416 – Grade 416 has the highest machinability of any stainless steel, at about 85% of that of a free-machining carbon steel. As for most other free-machining stainless steels the improvement in machinability is achieved by addition of sulphur which forms manganese sulphide inclusions; this sulphur addition also lowers the corrosion resistance, weldability and formability to below that of its non-free machining equivalent Grade 410. Grade 416 is sometimes used in the unhardened or hardened and highly tempered condition because of its low cost and ready machinability.

630 – 17-4 Precipitation Hardening also known as Type 630 is a chromium-copper precipitation hardening stainless steel used for applications requiring high strength and a moderate level of corrosion resistance. High strength is maintained to approximately 600 degrees Fahrenheit (316 degrees Celsius).

17-4 PH – A precipitation hardening martensitic stainless steel with Cu and Nb/Cb additions. The grade combines high strength, hardness (up to 572°F / 300°C), and corrosion resistance. The grade should not be used at temperatures above 572°F (300°C) or at very low temperatures. It has adequate resistance to atmospheric corrosion or in diluted acids or salts where its corrosion resistance is equivalent to Alloy 304 or 430.