

## 304 VS. 316 What's the Difference?





**If I had a dollar for every time I get asked that question... What's the Difference between 304 vs. 316? Which one is the best choice for my application?**

Outwardly, 304 stainless steel and 316 stainless steel look very similar. Both are non-magnetic, austenitic, and non-hardenable through heat treatment. Each of these stainless steel grades will resist corrosion, are quite durable, and are easily formed and fabricated.

The difference in their structure is primarily the addition of molybdenum to 316. Molybdenum further increases the corrosion resistance of the material, making it ideal for more acidic environments.

304 is generally less expensive and is a great choice for kitchen applications including appliances, sinks, pots and pans and flatware. It's well suited for liquid storage and tanks and food prep equipment. 304 is also used in heat exchangers, building facades, wheel covers, hose clamps, pressure vessels and other applications involving fresh water environments. It is generally considered one of the most widely-used austenitic stainless steels.

316, with its addition of molybdenum, is considerably more resistant to corrosive environments than 304. 316 is more suitable for sea water environments and marine applications. Because of its greater resistance to oxidations, it's also widely used in refining equipment, fasteners, pulp and paper processing equipment, pharmaceutical processing equipment, and surgical instrumentation.

Chemical Composition 304		Chemical Composition 316	
Carbon	0.08	Carbon	0.08
Manganese	2.00	Manganese	2.00
Phosphorus	0.045	Silicon	0.75
Sulfur	0.030	Chromium	16.00
Silicon	0.75	Nickel	10.00
Chromium	18.00	Molybdenum	2.00
Nickel	8.00	Phosphorus	0.045
Nitrogen	0.10	Sulfur	0.030
		Nitrogen	0.10
		Iron	Bal.
			

Although cost is an important consideration when selecting the appropriate grade of stainless, be sure you carefully consider the environment in which your product will be operating. As always, look to your sales professional from United Performance Metals to ensure you select the best material for your project. Contact us today at 888.282.3292. We'll help you find the metals you need and the solutions you want. For more information on 304, 316, or other grades we carry, visit [www.upmet.com](http://www.upmet.com).