

# **S** **Type 304 vs Type 316 Stainless Steel** **L**

**What is the difference between type 304 and type 316 Stainless Steel and why should I care?**

## **TYPE 304**

Type 304, with its chromium-nickel content and low carbon, is the most versatile and widely used of the austenitic stainless steels. Type 304 alloys are all modifications of the 18 percent chromium, 8 percent nickel austenitic alloy. Applications for this group of alloys are varied and all possess somewhat similar characteristics in resistance to oxidation, corrosion, and durability. All provide ease of fabrication and cleaning, prevention of product contamination and offer a variety of finishes and appearances.

## **GENERAL PROPERTIES TYPE 304**

Type 304 stainless steels can meet a wide variety of physical requirements, making them excellent materials for applications including auto molding and trim, wheel covers, kitchen equipment, hose clamps, springs, truck bodies, exhaust manifolds, stainless flatware, storage tanks, pressure vessels and piping.

## **TYPICAL ANALYSIS TYPE 304**

Represented by ASTM-A240 and ASME SA240.

Elements by Percentage by Weight - Maximum Unless Range is Specified.

C=.08 / Mn=2.00 / P=.045 / S=.030 / Si=1.00 / Cr=18.00-20.00 / Ni=8.00-12.00 / N=.10

## **TYPE 304 RESISTANCE TO CORROSION**

The 18 percent chromium, 8 percent nickel, provides good resistance to moderately acidic or caustic solutions. Type 304 may be considered to perform similarly in most non-severe applications. A notable exception is in the case of welding. Low carbon (304L) is the recommended alloy and provides increased resistance to intergranular corrosion.

## **MECHANICAL PROPERTIES OF TYPE 304 AT ROOM TEMPERATURE**

Typical Mechanical Properties required for annealed material covered by ASTM A240.

Yield Strength .2% offset=30,000 / Ultimate Tensile Strength=80,000 / Elongation=50%

Hardness R<sub>B</sub> =90 max.