

304 is the original "18-8" stainless. It is produced in greater quantity than any other austenitic stainless steel. 304 provides useful resistance to corrosion in many environments ranging from moderately reducing to moderately oxidizing. Through the controlled addition of nitrogen, it is common for 304L to meet the mechanical properties of 304. As a result, most products are dual certified as 304/304L.

## Chemistry

	Ni	Cr	Mn	Si	C	S	P	N	Fe
Min	8.0	18.0	-	-	-	-	-	-	-
Max	11.0	20.0	2.0	0.75	0.03	0.03	0.045	0.10	bal

Per ASTM A240

## Specifications

**UNS:** S30400, S30403

**W. Nr./EN:** 1.4301, 1.4307

**ASTM:** A240, A276, A312, A479

**ASME:** SA-240, SA-276, SA-312, SA-479

## Physical Properties

<b>Density</b>	0.285 lb/in <sup>3</sup>
<b>Melting Range</b>	2550-2590°F
<b>Poisson Ratio</b>	0.3
<b>Electrical Resistivity</b>	28.3 μΩ • in
<b>Coefficient of Thermal Expansion (68°F - 212°F)</b>	9.2 μin/(in • °F)
<b>Thermal Conductivity (212°F)</b>	9.4 BTU/(hr•ft•°F)
<b>Modulus of Elasticity (68°F)</b>	29 • 10 <sup>6</sup> psi

## Mechanical Properties

**Specification: A240**

<b>Ultimate Tensile Strength, ksi</b>	75
<b>0.2% Yield Strength, ksi</b>	30
<b>Elongation, %</b>	40
<b>Hardness MAX, Brinell</b>	201

\* Values are minimums for condition A unless otherwise stated

**Specification: A276**

<b>Ultimate Tensile Strength, ksi</b>	75
<b>0.2% Yield Strength, ksi</b>	30
<b>Elongation, %</b>	40
<b>Hardness MAX, Brinell</b>	-

\* Values are minimums for condition A unless otherwise stated

## Typical Low and Elevated Temperature Properties

Temperature, °F	Ultimate Tensile Strength, ksi	0.2% Yield Strength, ksi	Charpy Impact V-notch, ft-lbs
-425	250	100	85
-320	230	70	85
-100	150	50	-
70	90	35	150
400	70	23	-
800	66	19	-
1200	48	15.5	13
1500	23	13	-

The data and information in this printed matter are believed to be reliable. However, this material is not intended as a substitute for competent professional engineering assistance which is a requisite to any specific application. Rolled Alloys makes no warranty and assumes no legal liability or responsibility for results to be obtained in any particular situation, and shall not be liable for any direct, indirect, special, or consequential damage therefrom. This material is subject to revision without prior notice.

## Features

- Good general corrosion resistance
- Ease of cleaning
- Excellent strength and toughness at cryogenic temperatures
- Good formability
- Good weldability

## Applications

- Food processing and handling
- Heat exchangers
- Chemical process vessels
- Conveyors
- Architectural
- Pharmaceutical equipment

