



304H

Description

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. Grade 304H with its higher carbon content finds application at elevated temperatures. The austenitic structure also gives these grades excellent toughness, even down to cryogenic temperatures.

Typical Applications

- General purpose grade
- Beer Barrels
- Bulk milk coolers
- Food processing equipment
- Fire extinguisher parts
- Tube skelp
- Wine storage tanks
- Chemical containers
- Heat exchangers
- Winding wire

Corrosion Resistance

Very good in a wide range of atmospheric environments and many corrosive media. Subject to pitting and crevice corrosion in warm chloride environments, and stress corrosion cracking above 60°C

Heat Resistance

Grade 304H has higher strength at elevated temperatures so is often used for structural and pressure-containing applications at temperatures above about 500°C and up to 800°C. 304H will become sensitised in the temperature range of 425-860°C; this is a problem for high temperature applications but will result in reduced aqueous corrosion resistance.

Heat Treatment

Annealing - heat to 1850-2050 °F and cool rapidly. These grades cannot be hardened by thermal treatment.

Welding

Excellent. All standard methods. Use 308 rods or electrodes. Heavy welded sections in Type 304 may require post-weld annealing for maximum corrosion resistance.

Chemical Analysis		C	Mn	P	S	Si	Cr	Ni
	304	0.08	2.0	0.045	0.03	1.0	18.0-20.0	8.0-10.5
Max values	304H	0.04-0.10	2.0	0.045	0.03	1.0	18.0-20.0	8.0-10.5

Typical Mechanical Properties- Annealed	Yield Strength ksi	Tensile Strength ksi	Elongation % in 2"	Hardness		Impact Charpy Ft. - lbs	Modulus of Elasticity in Tension - ksi
				R b	BHN		
	35	84	55	80	149	135	28000

Other Properties	Creep Strength 1% flow 10,000 hours at 1000°F -ksi	Magnetic Permeability at 200H- Annealed	Electrical Resistivity - Microhm -Cm At 68°F	Coefficient of Thermal expansion: (ln/ln°F x 10 ⁻⁶) 32°- 212°F	Thermal Conductivity BTU/ft. ² /Hr./°F/ft.	
					At 212°F	At 932°F
	17.3	1.02	72	9.6	9.4	12.4

