

## Description

AISI 302HQ, also known as Grade **302HQ/1.4567**, is a specialized austenitic stainless steel alloy with excellent cold formability and corrosion resistance. It is widely used for manufacturing stainless steel fasteners such as self-tapping screws, machine screws, bolts, and rivets.

## Chemical Composition (%)

Element	Min	Max
Carbon (C)	-	0.03
Manganese (Mn)	-	2.00
Phosphorus (P)	-	0.045
Sulfur (S)	-	0.030
Silicon (Si)	-	1.00
Chromium (Cr)	17.0	19.0
Nickel (Ni)	8.0	10.5
Copper (Cu)	2.0	4.0

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## Mechanical Properties

Property	Value
Tensile Strength, min	515 MPa
Yield Strength (0.2% Proof), min	205 MPa
Elongation in 50 mm, min	40%
Hardness, max	201 HB

## Thermal & Physical Properties

- Density: 8.03 g/cm<sup>3</sup> (0.29 lb/in<sup>3</sup>)
- Modulus of Elasticity: 200 GPa (29 x 10<sup>6</sup> psi)
- Mean Coefficient of Thermal Expansion: 20-100°C (68-212°F): 16.6 x 10<sup>-6</sup> cm/cm°C (9.2 x 10<sup>-6</sup> in/in/°F)
- Thermal Conductivity at 100°C (212°F): 16.3 W/m·K (9.4 Btu/(hr·ft<sup>2</sup>·°F/ft))
- Specific Heat: 500 J/kg·K (0.12 Btu/lb/°F)

## Other Designations

- UNS S30430
- WNR 1.4567
- XM-7
- 304Cu
- 304HQ

## Fabrication & Heat Treatment

- Solution Treatment (Annealing): Heat to 1010-1120°C (1850-2050°F) and cool rapidly. This grade cannot be hardened by thermal treatment.
- Welding: Use Grade 308L rods or electrodes. Excellent weldability by all standard fusion methods, both with and without filler metals.
- Machining: Possible but not often done due to low sulfur content for improved formability.

## Applications

- Food processing equipment
- Transport and storage equipment (e.g., beer brewing, milk processing, wine making)
- Kitchen benches, sinks, troughs, equipment, and appliances
- Architectural paneling, railings, and trim
- Chemical containers, including for transport
- Heat exchangers
- Woven or welded screens
- Threaded fasteners
- Springs

## Supplied Forms

- Wire
- Bar
- Fasteners (e.g., self-tapping screws, machine screws, bolts, rivets)

## Features

- Excellent corrosion resistance, equal to or exceeding that of Grade 304
- Resistance to pitting and crevice corrosion in warm chloride environments
- Resistance to stress corrosion cracking above 50°C (122°F)
- Good oxidation resistance in intermittent service to 870°C (1600°F) and continuous service to 925°C (1700°F)
- Continuous use in the 425-860°C (800-1600°F) range is usually safe due to low carbon content
- Lowest work hardening rate among common austenitic stainless steels, resulting in a tensile strength increase of approximately 8 MPa per 1% reduction of area during cold work