

420 is a hardenable, martensitic stainless steel similar in chemical composition to that of 410, differing primarily in carbon content. 420 stainless steel contains higher carbon than 410 allowing for it to achieve higher heat treated strength and hardness levels, but at the sacrifice of reduced ductility. 420 offers comparable corrosion resistance to that of 410 and is commonly utilized for applications requiring high strength, high wear resistance, or good edge retention.

## Chemistry

	C	Mn	P	S	Si	Cr	Fe
Min	0.15	-	-	-	-	12.00	-
Max	-	1.00	0.040	0.030	1.00	14.00	bal

Per ASTM A276

## Specifications

**UNS:** S42000

**W. Nr./EN:** 1.4021

**AMS:** 5621, QQ-S763

**ASTM:** A276, A484

## Physical Properties

<b>Density</b>	0.278 lb/in <sup>3</sup>
<b>Melting Range</b>	2650 - 2750°F
<b>Poisson Ratio</b>	0.28
<b>Electrical Resistivity</b>	25.6 μΩ • in
<b>Coefficient of Thermal Expansion (68°F - 212°F)</b>	5.833 μin/in • °F
<b>Thermal Conductivity (212°F)</b>	14.4 BTU/(hr•ft•°F)
<b>Modulus of Elasticity (68°F)</b>	31.2 • 10 <sup>6</sup> psi

## Mechanical Properties

**Specification:** A276

<b>Hardness MAX, Brinell</b>	241
------------------------------	-----

\*Condition A

## Tempered Condition Properties

Tempering Temperature, °F	Ultimate Tensile Strength, ksi	0.2% Yield Strength, ksi	Rockwell Hardness, HRC
Annealed	85.8	51.5	163 HBW
440	255.2	190.1	48
550	229.6	176.0	44
600	232.9	179.0	45
800	236.0	185.6	46
900	233.0	179.3	46
1000	158.5	137.9	36
1200	121.6	94.6	23

## Features

- High carbon variant of 410
- Higher achievable strength and hardness compared to 410
- High wear resistance and edge retention properties

## Applications

- Industrial Chains
- Bearings
- Firearms
- Surgical Instruments
- Pumps & Valves
- Plastic Injection Molds & Dies
- Cutlery



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.