Stainless Steel 300 / 400 Series Alloys

1 Excellent • 2 Very Good • 3 Good • 4 Fair • 5 Poor

HRB Rockwell Hardness, B Scale
HRE Rockwell Hardness, E Scale
HRC Rockwell Hardness, C Scale
BHN Brinell Hardness Scale

No Data Available
metal not usually used in this condition

Alloy	Similar Designation	Usual Condition	Castability	Machinability	Corrosion Resistance	Weldability	Hardenable	Density (g/cm³)	As-Cast Tensile Strength (psi)	As-Cast Yield Strength (psi)	As-Cast Elongation (%)	As-Cast Hardness	Annealed Tensile Strength (psi)	Annealed Yield Strength (psi)	Annealed Elongation (%)	Annealed Hardness	Heat Treated Tensile Strength (psi)	Heat Treated Yield Strength (psi)	Heat Treated Elongation (%)	Heat Treated Hardness	Comments
302 CF-20 (JJ92501)	AMS 5358, ASTM A743 MIL S 81591	Solution Annealed	1	4	2	4	No	8					65,000	30,000	35	HRB 80					Best combination castability and corrosion resistance.
303 CF-16F (J92511)	AMS 5341, ASTM A743 MIL S 81591	Solution Annealed	3	3	2	5	No	8					65,000	30,000	35	HRB 80					Free matching stainless. Not easily welded.
304 CF-8 (J92600)	ASTM A 743 MIL S 867 MIL S 8159	Solution Annealed	1	4	1	2	No	8					65,000	30,000	35	HRB 80					Better corrosion resistance tha 302 or 303.
304L CF-3 (J92700)	AMS 5370, ASTM A351 MIL S 22216	Solution Annealed	1	4	1	1	No	8					63,000	30,000	35	HRB 80					304 Low Carbon cryogenic applications. Good weldability.
310 CK-20 (S31000)	AMS 5366, ASTM A 351 MIL S 22216	Solution Annealed	3	3	3	3	No	8					60,000	30,000	35	HRB 80					Oxidation resistance to 2000 degrees F (1000 degrees C) Moderate high temperature strength. Very good for thin sections, fine detail, and smooth surface finish.
316 CF-8M (J92900)	AMS 5360, ASTM A 351 MIL S 867	Solution Annealed	1	4	1	3	No	8					65,000	30,000	35	HRB 80					Excellent corrosion resistance and oxidation to 1600 degrees F (870 degrees C) Often used for food and paper processing equipment and ship hardware.
347 CF-8C (J92710)	AMS 5362, ASTM A 351 MIL S 867	Solution Annealed	2	3	1	1	No	8					70,000	32,000	30	HRB 80					Excellent for welding application. Excellent corrosion resistance. Will work hardened.
CN-7M (J95150)	ASTM A351 ASTM A 743	Solution Annealed	3	3	1	1	No	8					65,000	25,000	35	HRB 80					Sulfuric acid resistant.
410 CA-15 (J91150)	AMS 5350, ASTM A217 MIL S 81591	Annealed, Quenched and Tempered	2	2	3	3	Yes	7.75				HRC 25	70,000	45,000	20	HRB 95	180,000	140,000	8	HRC 44	Best combination of hardness and corrosion resistance.
416 (S41600)	AMS 5349	Annealed, Quenched and Tempered	4	2	3	5	Yes	7.73				HRC 26	70,000	40,000	15	HRB 95 max	160,000	130,000	5	HRC 30	Less tough, but a more machinable grade of 410.
420 CA-40 (J91153)	ASTM A743 MIL S 81591	Annealed, Quenched and Tempered	2	3	2	3	Yes	7.75				HRC 27	90,000	60,000	12	HRC 30	180,000	150,000	3	HRC 40/44	Higher hardness, but less toughness than 410.
431 CB-30 (J91803)	AMS 5353, ASTM A743 MIL S 8159	Annealed, Quenched and Tempered	3	3	2	3	Yes	7.74				HRC 20	130,000	80,000	15	HRC 17/25	208,000	165,000	13	HRC 40/45	Most resistant to corrosion of any 400 Series Stainless. Used in products requiring high strength and maximum corrosion resistance.
436 Greek Ascoloy (J91631)	AMS 5354	Normalized and Tempered	2	3	1	2	Yes	7.75					128,000	80,000	13	HRC 20/33	209,000	152,000	11	HRC 45/53	Heat resistance to 1000 degrees F (540 degrees C) but has excellent oxidation resistance to 1500 degrees F. (825 degrees C). Often substituted for more costly high alloy steels.
440A (S44002)	MIL A 22216 MIL S 91591	Annealed, Quenched and Tempered	2	4	4	5	Yes	7.68					100,000	60,000	10	HRC 28	260,000	240,000	2	HRC 50/58	Cutlery and molds. High hardness and ductility.
440C (S44004)	AMS 5352 MIL S 22216 MIL S 81591	Annealed, Quenched and Tempered	3	4	4	5	Yes	7.65				HRC 35	90,000	60,000	8	HRC 30	270,000	280,000	2	HRC 58/62	Best cutlery grade.

AlCuMet INC.
Precision Investment Castings
AS 9100 Rev. C / ISO 9001:2008 Certified
1-800-221-0419 • 3 Planeview Drive • Londonderry, New Hampshire 03053
Email: Info@AlCuMet.com • Website: www.AlCuMet.com