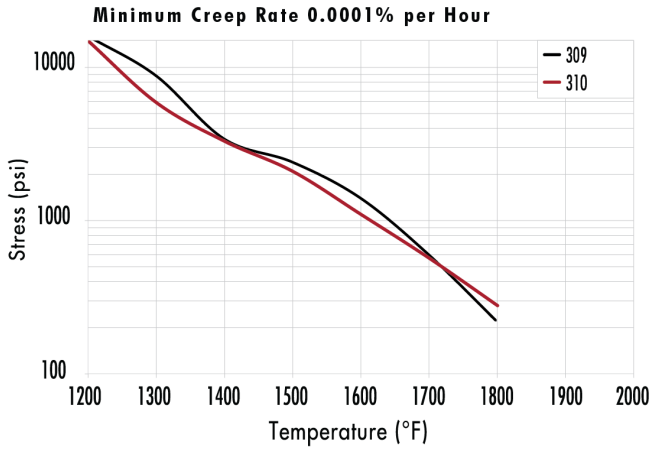
Advantages of 310

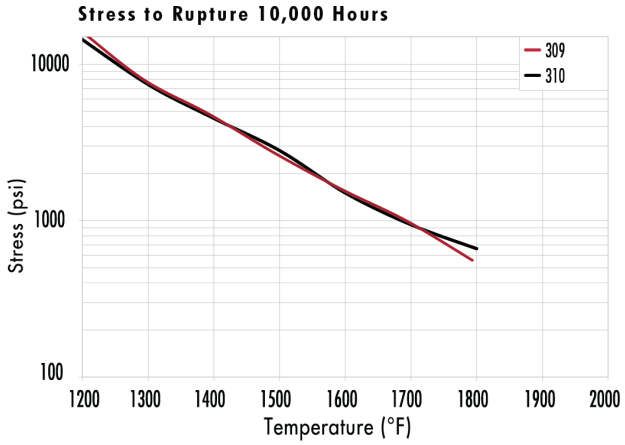
- 310 provides similar strength to 309 at high temperatures
- 310 has greater scaling resistance and is rated for higher temperatures than 309
- 310 machines similarly to 309
- 310 is readily available in diameters up to 6 inches

Chemical Composition, %

	Cr	Ni	Si	Mn	N	C	Ce	Fe
310 UNS S31008	25.0	20.0	0.5	1.6	-	0.05	-	balance
309 UNS S30908	23.0	13.0	0.8	1.6	-	0.05	-	balance

Creep Rupture Properties





Typical Tensile Properties, Plate

	Temperature, ° F	70	1200
310	Ultimate Tensile Strength, ksi	75	54.1
	0.2% Yield Strength, ksi	30	20.7
309	Ultimate Tensile Strength, ksi	75	52.0
	0.2% Yield Strength, ksi	30	22.0

ASME Section VIII Div. 1

Maximum Design Allowable Stresses

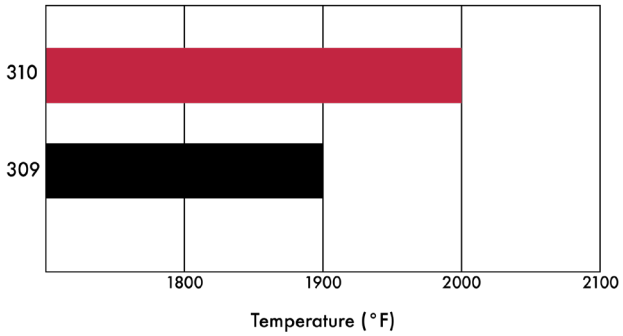
Temperature, ° F	1100	1200	1350	1500	1650
310H , ksi	7.6	4.0	1.7	0.75	-
309H, ksi	7.6	4.0	1.7	0.75	-

Machinability

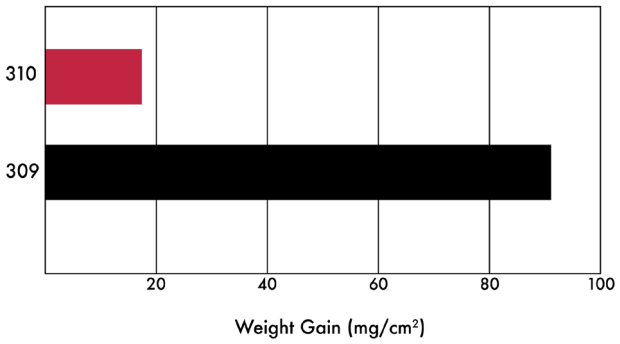
The machinability rating is determined by measuring the weighed averages of the normal cutting speed, surface finish, and tool life for each material. Machinability rating less than 100% is more difficult to machine than B1112 and material with a value more than 100% is easier.

	Machinability* (Surface ft/min)	Speed as a % of B1112	Hardness (Nominal, HRB)	Yield Strength (Min, ksi)
310 UNS S31008, S31009	70-75	44	78	30
309 UNS S30908	70-75	44	83	30

Maximum Suggested Temperature Limit in Air



2000°F Cyclic Oxidation Testing in Air



TECHNICAL QUESTIONS?

OUR TEAM OF METALLURGISTS ARE HERE TO HELP.

PHONE: 1.800.521.0332 (Ask for a Metallurgist)

EMAIL: metallurgical-help@rolledalloys.com

Additional resources available at rolledalloys.com/technical-resources/

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