

INCONEL ALLOY 31

NICKEL ALLOY

HIGH TEMPERATURE RESISTING ALLOY

INCONEL 31 covers nickel alloy forgings. These alloys are classified into different grades according to their chemical composition. A chemical analysis shall be employed on each alloy in order to determine its chemical composition. Grain size and mechanical properties like tensile strength, yield strength, and elongation shall be measured. A tension test and nondestructive ultrasonic test shall be done on each specimen. Inconel 31 Alloy covers low-carbon Ni-Fe-Cr-Mo-Cu alloy UNS N08031. The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

Chemical Properties

C	Mn	P	S	Si	Cr	Mo	Ni	Cu	N
0.015 Max	2.0 Max	0.020 Max	0.010 Max	0.3 Max	26.0-28.0	6.0-7.0	30.0-32.0	1.0-1.4	0.15-0.25

Mechanical Properties

Yield strength	Tensile strength	Elongation
Min 0.2% Mpa	Min Mpa	Min %
276	650	40

Physical Properties

Density	Elastic Modulus	Mean Coefficient of Thermal			Thermal Conductivity		Specific Heat	Electrical Resistivity
(Kg/m ³)	(Gpa)	Expansion(μm/m/°C)			(W/m.K)		0-100°C	(nΩ.m)
8.1	198	14.3	15.5	15.9	11.7	21.9	452	103

Heat Treatment

Solution Annealed @ 1177°C & Rapidly Liquid Quenched

Equivalent Designation

UNS N08031
EN name EN10204-3.1
W.Nr. 1.4562

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