

The following is a summary of compositions of typical wrought superalloys, including links or references to the source of information.

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ALLOY	UNS#	DESCRIPTION	COMPOSITION (WT%)															WEBLINK/REF.
			Ni	Fe	Cr	Ti	Co	Mo	W	C	Mn	Si	Al	S	B	Cu	Others	
720LI		Precipitation-hardened wrought alloy. Has also been made as P/M alloy - see Courturier et. al. in Superalloys 2004 reference to the right.	57	...	16	5	15	3	1.25	0.025	...	...	2.5	...	...	...	0.03 Zr	M. J. Donachie and S. J. Donachie, Superalloys: A Technical Guide, 2 nd , Edition, ASM International, 2002
A-286	S66286	Fe-Ni-Cr wrought alloy with additions of Mo & Ti. Age-hardenable. Maintains strength & oxidation resistance to 700°C.	24.0 - 27.0	bal.	13.5 - 16.0	1.90 - 2.35	...	1.0-1.5		0.08 max	2.0 max	1.0 max	0.35 max	0.030 max	0.001 - 0.01		0.10 - 0.50 V	Special Metals
Alloy 901	N09901	Ni-Fe-Cr wrought alloy with additions of Mo, Ti and Al. For service up to 600°C.	42.5	bal.	12.5	2.9	1.0 max	5.75	...	0.1 max	0.5 max	0.4 max	0.35 max	0.03 max	...	0.5 max		Special Metals
Allvac 718Plus	N07818	Wrought, precipitation-hardened nickel-base alloy. Has high temperature capability & thermal stability of Waspaloy with the processing characteristics of 718	bal.	8.0 - 10.0	17.0 - 21.0	0.50 - 1.00	8.0 - 10.0	2.5 - 3.1	0.5 - 1.5	0.06 max	0.35 max	0.35 max	1.20 - 1.80	0.010 max	0.008 max	...	4.75 - 5.80 Nb, 0.02 max P	Carpenter Allvac
Astroloy	N13017	Ni-Co-Cr-Mo precipitation Hardened alloy	bal.	...	15	3.5	17	5	...	0.04	...	...	4	...	0.025	...		Allvac
C263		Wrought Alloy.	bal.	0.7	20	2.15	20	5.8	...	0.06	0.6	0.4	0.45	...	...	...		Isothermal and Thermomechanical Fatigue of Superalloy C263 [pp. 545-552] Y.H. Zhang and D.M. Knowles
C-276	N10276	Ni-Mo-Cr-W alloy with excellent corrosion resistance & good fabricability. Directionally solidified.	bal.	5.6 - 6.5	15.8 - 16.3	...	2.25 max	15.5 - 16	3.4 - 3.8	0.10 max	0.5 max	0.08 max	...	0.005 max	...	...	0.15 - 0.25 V, 0.015 max P	Haynes International Carpenter
Hastelloy B	N10001	Low thermal expansion, Limited oxidation/corrosion resistance	67 (bal.)	5	1 max	...	2.5 max	28		0.05 max	1 max	1 max	0.05 max	0.3 V	Haynes International

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Hastelloy S	N06635	Low thermal expansion, Hot & cold-workable	67 (bal.)	3.0 max	14.5 - 17.0	...	2.0 max	14.0 - 16.5	1.0 max	0.02 max	0.30 - 1.0	0.20 - 0.75	0.10 - 0.50	0.015 max	0.015 max	0.35 max	0.01 - 0.10 La, 0.020 max P	Haynes International
Hastelloy W	N10004	Filler metal for welding	63 (bal.)	6	5	...	2.5 max	24		0.12 max	1 max	1 max	...	...	...	...	0.6 max V	Haynes International
Hastelloy X	N06002	Ni-Cr-Fe-Mo alloy excellent forming & welding, good ductility after elevated temperature exposure	47 (bal.)	18	22	...	1.5	9	0.6	0.1	1 max	1 max	...	...	0.008 max	...		Haynes International
Haynes 188	R30188	Co-Ni-Cr-W alloy, Readily fabricated	22	3	22	...	39 (bal.)	...	14	0.1	1.25 max	0.35	...	...	0.015 max	...	0.03 La	Haynes International
Haynes 214	N07214	Ni-Cr-Al-Fe alloy, Conventional fabricating	75 (bal.)	3	16	...	...	...	...	0.05	0.5 max	0.2 max	4.5	...	0.01 max	...	0.1 max Zr, 0.01 Y	Haynes International
Haynes 230	N06230	Ni-Cr-W-Mo alloy Low thermal expansion, Hot & cold-formable	57 (bal.)	3 max	22	...	5 max	2	14	0.1	0.5	0.4	0.3	...	0.015 max	...	0.02 La	Haynes International
Haynes 242	N10242	Ni-Mo-Cr alloy, Low thermal expansion, Hot & cold formable	65 (bal.)	2.0 max	7.0 - 9.0	...	2.5 max	24.0 - 26.0	...	0.03 max	0.80 max	0.80 max	0.50 max	...	0.006 max	0.50 max		Haynes International
Incoloy 909	N19909	Ni-Fe-Co-Si-Nb-Ti alloy, Low thermal expansion Constant modulus of elasticity	35.0 - 40.0	bal.	...	1.3 - 1.8	12.0 - 16.0	...	...	0.06 max	...	0.25 - 0.50	0.15 max	...	...	...	4.3 - 5.2 Nb	Special Metals
Incoloy MA956	S67956	Fe-Cr-Al alloy w/ yttrium oxide Strengthening. NO LONGER PRODUCED	0.50 max	Bal.	18.5 - 21.5	0.2 - 0.6	0.3 max	...	...	0.1 max	0.30 max	...	3.75 - 5.75	...	...	0.15 max	0.3 - 0.7 Yttrium oxide, 0.02 max P	Special Metals
Inconel 100		Wrought Alloy	60	<0.6	10	4.7	15	3	...	0.15	...	...	5.5	...	...	...	0.06 Zr, 1.0 V	M. J. Donachie and S. J. Donachie, Superalloys: A Technical Guide, 2 nd , Edition, ASM International, 2002
Inconel 600	N06600	Wrought Ni-Cr alloy with good oxidation and corrosion resistance.	Ni+Co = 72.0 min 72.00 min 72.0 min	6.00 - 10.00 6.00 - 10.00 8	14.0 - 17.0 14.00 - 17.00 15.5	...	Ni+Co = 72.0 min ... ...	...	...	0.15 max 0.10 max 0.075	1.00 max 1.00 max ...	0.50 max 0.50 max ...	...	0.015 max 0.015 max ...	...	0.50 max 0.50 max ...		Special Metals Carpenter Allvac
Inconel 601	N06601	Wrought Ni-Cr alloy with Al additions for enhanced oxidation and corrosion resistance.	58.0 - 63.0	bal.	21.0 - 25.0	0.10 max	1.0 max	0.50 max	1.0 - 1.7	0.015 max	...	1.0 max		Special Metals

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ALLOY	UNS#	DESCRIPTION	COMPOSITION (WT%)														WEBLINK/REF.	
Inconel 625	N06625	Wrought Ni-Cr-Mo alloy with Nb additions for increased strength and corrosion resistance.	58.0 min	5.0 max	20.0 - 23.0	0.40 max	1.0 max	8.0 - 10.0	...	0.10 max	0.50 max	0.50 max	0.40 max	0.015 max	...	3.15 - 4.15 Nb+Ta, 0.015 max P	Special Metals	
Inconel 706	N09706	Wrought Ni-Fe-Cr precipitation hardened alloy with good fabricability.	39.0 - 44.0 (a)	bal.	14.5 - 17.5	1.5 - 2.0	1.00 max	...	...	0.06 max	0.35 max	0.35 max	0.40 max	0.015 max	0.006 max	0.30 max	2.5 - 3.3 Nb+Ta, 0.020 max P, (a) 39.0 - 44.0 Ni(+Co)	Special Metals
Inconel 718	N07718	precipitation strengthened Ni based superalloy, good oxidation and creep resistance up to 650°C, high strength and fatigue resistance	50.00 - 55.00 (b)	bal.	17.00 - 21.00	0.65 - 1.15	1.00 max	2.80 - 3.30	...	0.08 max	0.35 max	0.35 max	0.20 - 0.80	0.015 max	0.006 max	0.30 max	4.75 - 5.50 Nb+Ta, 0.015 max P, (b) 50.00 - 55.00 Ni(+Co)	Special Metals
			50.00 - 55.00 (b)	bal.	17.00 - 21.00	0.65 - 1.15	(b)	2.80 - 3.30	...	0.10 max	0.35 max	0.35 max	0.35 - 0.85	0.015 max	0.001 - 0.006	0.15 max	4.75 - 5.50 Nb + Ta, 0.015 max P, (b) 50.00 - 55.00 Ni + Co	Carpenter
			52 (bal.)	19	18	0.9	1 max	3	...	0.05	0.35 max	0.35 max	0.5	...	0.009	0.1 max	5 Nb+Ta	Haynes
54	bal.	19	0.9	...	3.1	...	0.02	...	...	0.5	...	...	...	...	5.2 Nb	Allvac		
Inconel 783	R30783	Low thermal expansion alloy designed for high strength, good oxidation resistance and higher temperature capability with respect to the 900 series alloys.	26.0-30.0	24.0 - 27.0	2.5 - 3.5	0.1 - 0.4	bal.	...	...	0.03 max	0.50 max	0.50 max	5.0 - 6.0	0.005 max	0.003 - 0.012	0.50 max	2.5 - 3.5 Nb, 0.015 max P	Special Metals
Inconel MA754	N07754	Includes yttrium oxide strengthening. NO LONGER PRODUCED	78	1	20	0.5	...	...	...	0.05	...	...	0.3	...	...	...	0.6 Yttrium Oxide	Special Metals
Nimonic 75	N06075	Ni-Cr-Ti-C alloy, for sheet applications	bal.	5.0 max	18.0 - 21.0	0.2 - 0.6	...	...	...	0.08 - 0.15	1.0 max	1.0 max	...	...	...	0.5 max		Special Metals
Nimonic 80A	N07080	Like Nimonic 75 but with Al and Ti for greater strength	bal.	3.0 max	18.0 - 21.0	1.8 - 2.7	2.0 max	...	...	0.10 max	1.0 max	1.0 max	1.0 - 1.8	0.015 max	0.008 max	0.2 max	0.0025 max Pb, 0.15 max Zr	Special Metals
Nimonic 90	N07090	Ni-Cr-Co-Ti-Al alloy	bal.	1.5 max	18.0 - 21.0	2.0 - 3.0	15.0 - 21.0	...	...	0.13 max	1.0 max	1.0 max	1.0 - 2.0	0.015 max	0.02 max	0.2 max	0.0020 max Pb, 0.15 max Zr	Special Metals
RA 333	N06333	High Cr, nickel-base superalloy resistant to high temperature oxidation, carburization and thermal shock.	45	18	25	...	3	3	3	0.05	1.5	1.2	...	...	...	...		Rolled Alloys
Rene 41	N07041	precipitation-hardened wrought nickel-base superalloy with high strength and good oxidation resistance	58 (bal.)	5 max	19	3.1	11	4.3	...	0.09	0.1 max	0.5 max	1.5	...	0.006	...		Haynes

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			bal.	5	18.00 - 20.00	3.00 - 3.30	10.00 - 12.00	9.00 - 10.50	...	0.06 - 0.12	0.5 max	0.50 max	1.40 - 1.60	...	0.003 - 0.010	...		
Rene 88DT		advanced high strength powder metallurgy Ni based superalloy, good creep and fatigue crack growth resistance	bal.	5	18.00 - 20.00	3.00 - 3.30	10.00 - 12.00	9.00 - 10.50	...	0.06 - 0.12	0.5 max	0.50 max	1.40 - 1.60	...	0.003 - 0.010	...	0.7 Nb	Carpenter
			bal.	3	19	3.15	11	9.75	...	0.05	...	...	1.6	...	0.007	...		Allvac
			bal.	5.0 max	18.0 - 20.0	3.0 - 3.3	10.0 - 12.0	9.0 - 10.5	...	0.12 max	...	...	1.40 - 1.80	...	0.003 - 0.010	...		Special Metals
			bal.	...	16	3.7	13	4	4	0.03	...	...	2.1	...	...	...		Control of Grain Size Via Forging Strain Rate Limits for R'88DT [pp. 49-58] E. Huron, S. Srivatsa and E. Raymond, Quench Cracking
Rene 95		gamma' strengthened powder metallurgy Ni based superalloy	bal.	...	13	2.5	8	3.5	3.5	0.06	...	...	3.5	...	0.015	...	3.5 Nb, 0.05 Zr	Quench Cracking Characterization of Superalloys Using Fracture Mechanics Approach [pp. 109-116] J. Mao, K.M. Chang and D. Furrer
Thermospa n		Fe-Ni-Co-Cr alloy with low thermal expansion	25	bal.	5.5	0.8	29	...	...	0.05	0.5	0.3	0.5	0.015	0.01	0.5	4.8 Nb, 0.015 P	Carpenter
Udimet 700		Wrought Nickel-base superalloy.	bal.	...	15	3.5	18.5	5	...	0.07	...	...	4.4	...	0.025	...	0.025 - 0.05 Zr	Principal Metals
Udimet 720	n/a	Ni-Cr-Co-W-Mo-Ti-Al with high impact strength after elevated temperature exposure.	bal.	...	15.5 - 16.5	4.75 - 5.25	14.0 - 15.5	2.75 - 3.25	1.0 - 1.5	0.01 - 0.02	...	...	2.25 - 2.75	...	0.01 - 0.02	...		C-M Group Special Metals
Waspaloy	N07001	Ni-Co-Cr-Mo-Al-Ti alloy	bal.	2.00 max	18.0 - 21.0	2.75 - 3.25	12.00 - 15.00	3.50 - 5.00	...	0.02 - 0.10 max	1.00 max	0.75 max	1.20 - 1.60	0.030 max	0.003 - 0.01	0.50 max	0.02 - 0.12 Zr, 0.030 max. P	Special Metals
			bal.	2.00 max	19.00 - 19.50	2.60 - 3.25	12.0 - 13.0	4.10 - 4.35	...	0.03 - 0.04	0.10 max	0.10 max	1.00 - 1.50	0.008 max	0.003 - 0.008	...	0.04 - 0.06 Zr	Carpenter
			bal.	1	19.5	3	13	4.3	...	0.05	...	...	1.4	...	0.01	...	0.07 Zr	Allvac
			58 (bal.)	2 max	19	3	13.5	4.4	...	0.08	0.1 max	0.15 max	1.5	...	0.006	0.1 max	0.05 Zr	Haynes International