

**SUPER ALLOYS/NICKEL ALLOYS**

Grade	Element	ASTM A453 660	Carpenter 20®	Hastelloy® B2	Hastelloy® C-22	Hastelloy® C-276	Hastelloy® C4	Incoloy® 800	Incoloy® 800H
<b>Chemical Properties</b>	<b>C</b>	<= 0.08	<= 0.06	<= 0.02	<= 0.15	<= 0.01	<= 0.015	<= 0.10	0.05-0.10
	<b>Si</b>	<= 1.00	<= 1.00	<= 0.10x	<= 0.08	<= 0.08	<= 0.08	<= 1.00	<= 1.00
	<b>Mn</b>	<= 2.00	<= 2.00	<= 1.00	0.5max	<= 1.00	<= 1.00	<= 1.50	<= 1.50
	<b>Ni</b>	24.0-27.0	32.5-35.0	Bal.	Bal.	Bal.	Bal.	30.0-35.0	30.0-35.0
	<b>Cr</b>	13.0-16.0	19.0-21.0	<= 1.00	29.0-22.5	14.5-16.5	14.0-18.0	19.0-23.0	19.0-23.0
	<b>Fe</b>	Bal.	Bal.	<= 2.00	2.00 - 6.00	4.00 - 7.00	<= 3.0	>= 39.50	>= 39.50
	<b>Mo</b>	1.0-1.5	2.0-3.0	26.0-30.0	12.5-14.5	15.0-17.0	14.0-17.0		
	<b>Cu</b>	<= 0.30	3.0-4.0					<= 0.75	<= 0.75
	<b>S</b>	<= 0.30	<=0.002	<= 0.30	<= 0.02	<= 0.03	<= 0.010	<= 0.015	<= 0.015
	<b>Al</b>	<= 0.35						0.15-0.60	0.15-0.60
	<b>Ti</b>	1.9-2.35					<= 0.70	0.15-0.60	0.15-0.60
	<b>P</b>	<= 0.40	<= 0.35	<= 0.04	<= 0.04	<= 0.025			
<b>Residual</b>	V 0.1-0.5, B 0.001-0.010	Pb 0.035max, Nb + Ta 8xC min, 0.1% max	Co 1.0max	Co 3.5max, W2.5-3.5, V 0.35max	Co 2.5max, W3.0-4.5, V 0.35max	Co 2.0max			
<b>Name</b>	<b>Alloy Name</b>	A286	Carpenter 20®	Hastelloy® B2	Hastelloy® C-22	Hastelloy® C-276	Hastelloy® C4	Incoloy® 800	Incoloy® 800H
<b>USA</b>	<b>UNS</b>	S66286	N08020	N10665	N06022	N10276	N06455	N08800	N08810
	<b>ASTM</b>	A453 660		B333, B335	B574, B575	B574-5	B574, B575	B407-409	
	<b>AMS</b>							5766, 5871	
<b>UK</b>	<b>BS</b>	BS4882 B17B						BS3076: NA15	BS3076 NA15
<b>France</b>	<b>AFNOR</b>	XN 26 TW						25NC35-20	
<b>Germany</b>	<b>DIN</b>					17744, 17750-52		X10 Ni Cr Al Ti	DIN 17460
	<b>Werkstoff Nr.</b>	1.4944				2.4819		1.4876	1.4876

**SUPER ALLOYS/NICKEL ALLOYS**

<b>Grade</b>	<b>Element</b>	<b>Incoloy®825</b>	<b>Inconel®X-750</b>	<b>Inconel®600</b>	<b>Inconel®601</b>	<b>Inconel®625</b>	<b>Inconel® 718</b>	<b>Monel®400</b>	<b>Monel®K500</b>
<b>Chemical Properties</b>	<b>C</b>	<= 0.05	<= 0.08	<= 0.15	<= 0.10max	<= 0.10max	<= 0.08	<= 0.30	<= 0.25
	<b>Si</b>	<= 0.50	<= 0.50	<= 0.50	<= 0.50	<= 0.50	<= 0.35	<= 0.50	<= 0.50
	<b>Mn</b>	<= 1.00	<= 0.30	<= 1.00	<= 1.00	<= 0.50	<= 0.35	<= 2.00	<= 1.5
	<b>Ni</b>	38.0-46.0	(+Co) 70.0 min	>= 72.00	58.0-63.0	>= 58.00	50.0-55.0	>= 63.00	63.0-70.0
	<b>Cr</b>	19.5-23.5	14.0-17.0	14.0-17.0	21.0-25.0	20.0-23.0	17.0-21.0		
	<b>Fe</b>	>= 22.0	5.0-9.0	6.0-10.0	Bal.	<=C5.0	Bal.	<= 2.50	<= 2.00
	<b>Mo</b>	2.5-3.5				8.0-10.0	2.8-3.3		
	<b>Cu</b>	1.5-3.0	<= 0.50	<= 0.50	<=1.00		<= 0.30	28.0-34.0	Bal.
	<b>S</b>	<= 0.30	<= 0.01	<= 0.015	<= 0.015	<= 0.015	<= 0.015	<= 0.024	<= 0.01
	<b>Al</b>	<= 0.2	0.40-1.00		1.0-1.70	<= 0.40	0.20-0.80		2.3-3.15
	<b>Ti</b>	0.60-1.20	2.25-2.70			<= 0.40	0.65-1.15		0.35-0.85
	<b>P</b>					<= 0.15	<= 0.15		
<b>Residual</b>		Cb+ Ta 0.70-1.20			Co 1.0max, Nb +Ta 3.15-4.15	Co 1.0max, B 0.006max, Nb +Ta 4.75-5.5			
<b>Name</b>	<b>Alloy Name</b>	Incoloy®825	Inconel® X-750	Inconel®600	Inconel®601	Inconel®625	Inconel®718	Monel®400	Monel®K500
<b>USA</b>	<b>UNS</b>	N08825	N07750	N06600	N06601	N06625	N07718	N04400	N05500
	<b>ASTM</b>	B423-425	B637	B166-168, B564		B443-4, B446	B637, B670	B127, B564	
	<b>AMS</b>		5542, 5582/3	5540, 7232	5715, 5870	5581, 5837		4544, 4574	4676
<b>UK</b>	<b>BS</b>	BS3076: NA16	HR 505	BS3076: NA14		BS3076: NA21		BS3076: NA13	BS3076: NA 18
<b>France</b>	<b>AFNOR</b>	WFe32C20DU	NC 15Fe-T	NC 15Fe			NC19FeNb	NU 30	
<b>Germany</b>	<b>DIN</b>	17744, 17750-52		17742: NiCr 15Fe	17742	17744, 17750-52		17743: Ni Cu 30 Fe	17743: Ni Cu 30 Al
	<b>Werkstoff Nr.</b>	2.4858	2.4669	2.4816	2.4851	2.4856	2.4668	2.4360/2.4361	2.4375

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**SUPER ALLOYS/NICKEL ALLOYS**

<b>Grade</b>	<b>Element</b>	<b>Nickel 200</b>	<b>NIMONIC®75</b>	<b>NIMONIC®80A</b>	<b>NIMONIC®90</b>
<b>Chemical Properties</b>	C	<= 0.15	0.08-0.15	<= 0.10	<= 0.13
	Si	<= 0.35	<= 1.00	<= 1.00	<= 1.00
	Mn	<= 0.35	<= 1.00	<= 1.00	<= 1.00
	Ni	99.0min	Bal.	Bal.	Bal.
	Cr		18.0-21.0	18.0-21.0	18.0-21.0
	Fe	<= 0.40	<= 5.00max	<= 3.00	<= 1.50
	Mo				
	Cu	<= 0.25	<= 0.50	<= 0.20	<= 0.20
	S	<= 0.01		<= 0.015	<= 0.015
	Al			1.0-1.8	1.0-2.0
	Ti		0.2-0.6	1.8-2.7	2.0-3.0
	P				
	Residual			Co 2,0max, Pb 0.0025max, Z 0.15max, B 0.008max	Co 15.0-21.0, Pb 0.002max, Z 0.15max, B 0.02max
<b>Name</b>	Alloy Name	Nickel 200	NIMONIC®75	NIMONIC®80A	NIMONIC®90
<b>USA</b>	UNS	N02200	N06075	N07080	N07090
	ASTM	B160-163		B637	
	AMS	5553			5829
<b>UK</b>	BS	BS3076: NA11	HR5, HR203	BS3076: NA20	BS3975: NA19
<b>France</b>	AFNOR		NC 20T	NC 20TA	NCK20TA
<b>Germany</b>	DIN	17740; Ni99.2	17742 : Ni Cr 20 Ti	17742: Ni Cr 20 Ti Al	
	Werkstoff Nr.	2.4066/2.4060	2.4630/2.4951	2.4631/2.4952	2.4632