

TABLE XIII - NICKEL BASE ALLOYS

Typical Chemical Range Percentages

Trade Name	C	Mn	P	S	Si	Ni	Cr	Mo	Cu	Fe	Co	V	W	Other
Alloy B	.12	1.0	.030	.030	1.00	Bal.	1.00	26.00 30.00		4.00 6.00	2.50	.20 .60		
Alloy C (CW-6M)	.07	1.0	.04	.03	1.00	Bal.	17.0 20.0	17.0 20.0		3.00				
Alloy C (CW-12MW)	.12	1.0	.03	.03	1.0	+ Co Bal.	15.5 17.5	16.0 18.0		4.5 7.0	2.5	.20 .40	3.75 5.25	
Alloy X	.20	1.0	.04	.03	1.00	Bal.	20.50 23.00	8.00 10.00		17.00 20.00	.50 2.50		.20 1.00	
Invar	.12	.20 .50	.04	.03	.40	35.0 37.0				Bal.				
In 600 ①	.15	1.0	.03	.015	.50	72 min.	14.0 17.0		.50	6.0 10.0				
In 625 ②	.10	.50	.015	.015	.50	Bal.	20.0 23.0	8.0 10.0	.30	5.0	1.0			0.4Ti, 0.41Al, 3.15-4.15 Cb + Ta
Monel 410	.35	1.5			2.0	62.0 68.0			26.0 33.0	2.5	*			.50 Al
S Monel	.25	1.5			3.5 4.5	60.0			27.0 31.0	2.5	*			.50 Al
RH Monel	.40 .70	1.5			2.3 3.0	Bal.			29.0 34.0	.5	1.0			.50 Al
E Monel	.30	1.5			1.0 2.0	60.0 min.			26.0 33.0	3.5	*			.50 Al 1.0- 3.0Cb + Ta
M-35 Monel	.35	1.5	.03	.03	1.25	Bal.			26.0 33.0	3.5				0.5 Max Cb
47-50	.05	.60	.02	.02	.60	47.0 50.0				Bal.				

Cobalt included in % Nickel. Maximum unless range is shown.

① Also see International Nickel's Inconel 600.

② Also see International Nickel's Inconel 625.

**TABLE XIV - PROPERTIES OF SEPARATELY CAST TEST BARS
OF NICKEL BASE ALLOYS**

Alloy	Condition	Tensile Strength		0.2% Yield Strength		% Elongation Range (in 2.5 cm)	Hardness Range
		English psi	Metric MPa	English psi	Metric MPa		
Alloy B	Annealed	75-85,000	517-586	50-60,000	345-414	8-12	90-100 Rb
Alloy C	As Cast	80-95,000	552-655	45-55,000	310-379	8-12	90-100 Rb
	Annealed	75-95,000	517-655	45-55,000	310-379	8-12	90 Rb - 25 Rc
Alloy X	A.C.24°C	63-70,000	434-483	41-45,000	283-310	10-15	85-96 Rb
	A.C.816°C	35-45,000	241-310			12-20	
Invar	As Cast	50-60,000	345-414	25-30,000	172-207	30-40	50-60 Rb
In 600①	As Cast	65-75,000	448-517	35-40,000	241-276	10-20	80-90 Rb
In 625②	Annealed	80-100,000	552-758	40-55,000	276-379	15-30	10-20 Rc
Monel 410	As Cast	65-75,000	448-517	32-38,000	221-262	25-35	65-75 Rb
S Monel	Annealed	100-110,000	690-758	55-65,000	379-448	5-10	20-28 Rc
	Hardened	120-140,000	827-965	85-100,000	586-690	0	32-38 Rc
RH Monel	As Cast	100-110,000	690-758	60-80,000	414-552	10-20	20-30 Rc
Monel E	As Cast	65-80,000	448-552	33-40,000	227-276	25-35	67-78 Rb
M-35 Monel	As Cast	65-80,000	448-552	25-35,000	172-241	25-40	65-85 Rb
47-50	Annealed	60-70,000	414-483	20-30,000	138-207	25-35	55-60 Rb

NOTE: The above mechanical property values are for information only. They do not necessarily apply to casting. Any requirements for mechanical properties are beyond this standard and must be negotiated with the foundry.

① Also see International Nickel's Inconel 600.

② Also see International Nickel's Inconel 625.