

Stainless & Nickel Alloys



ArcelorMittal

Controlled Expansion Alloys

Magnetic Alloys



Controlled Expansion Alloys - Magnetic Alloys

Grades	WNR	ASTM	C	Ni	Co	Cr	Si	Mn	Fe	Oth.	Alloy Type	Main properties							Main utilizations / applications				
												Average thermal expansion between 0°C and (in 10 ⁻⁷ /°C)								TC °C	ρ at 20°C μΩ.cm	K at 20°C J/cm.s.°C	UTS Mpa
												-100°C	100°C	200°C	300°C	400°C	500°C	600°C					
Controlled Expansion Alloys																							
INVAR	1.3912	A658	<0.03	36	-	-	<0.5	<0.5	Bal.		FeNi	-16	11	22	43	(76)	(89)	(100)	230	75	0.105	590	Precision measuring instruments. control apparatus. thermostats
N42			<0.015	41	-	-	<0.2	0.5	Bal.		FeNi	-55	45	44	45	60	(78)	(90)	330	63	0.125	590	Sealing with soft glass
N42 LC	1.3917		<0.01	41	-	-	<0.2	1	Bal.		FeNi	-55	45	44	45	60	(78)	(90)	330	63	0.125	550	Sealing with soft glass
N42 Dumet	1.3917		<0.05	42	-	-	<0.2	<1	Bal.		FeNi	-66	57	55	64	(81)	(93)	330	63	0.125	590	Core wire for dumet	
N47 Dumet	1.3920		<0.03	47	-	-	<0.2	<1	Bal.		FeNi	-80	81	82	83	90	(102)	450	51	0.160	550	Core wire for dumet	
N48	1.3922		<0.03	48	-	-	<0.3	<0.5	Bal.		FeNi	-90	92	90	88	92	(103)	450	50	0.160	550	Electrical wiring for glass metal connections	
N52	1.3923	F30	<0.03	50.5	-	-	<0.2	<1	Bal.		FeNi	-99	100	100	98	98	(102)	500	44	0.167	550	Glass sealing	
DILVER 0			<0.04	-	-	29	1	<1	Bal.		FeCr	(-89)	95	98	102	106	111	114	65	0.121	580	Glass sealing	
N485	2.4486		<0.01	48	-	5	<0.5	<0.5	Bal.		FeNiCr	(-88)	92	93	102	114	(125)	350	85	0.142	570	Glass sealing in semi-conductor technology	
DILVER P	1.3981		<0.05	29	18	-	<0.5	<0.5	Bal.		FeNiCo	(-65)	60	55	49	62	76	425	49	0.175	540	Ceramic-metal connection. opto-electronics. electrical wiring for high voltage applications	
NICKEL 200	2.4060		<0.05	>99.6	-	-	<0.15	<0.15	<0.25		Nickel	(-135)	133	136	141	146	149	152	8	0.750	550	Electrical wiring	
NICKEL 205	2.4061		<0.05	>99.6	-	-	<0.15	<0.15	<0.25		Nickel, Ti	(-135)	133	136	141	146	149	152	8	0.750	550	Anodes and grids. lead wire	
NIMN2	2.4110		<0.1	>97	-	-	<0.2	2	<0.3		NiMn	-	130	-	-	-	-	340	13	0.630	550	Electrical wiring for lighting industry	
Magnetic Alloys																							
AFK 584			<0.02	-	52.5	3.5	<0.3	0.5	Bal.	V 8	Cobase												Tachometers and other measuring instruments
PERMIMPHY			<0.01	80	-	-	<0.3	0.5	14	Mo 5	NiFeMo												Measuring instruments.
SUPRA 50	1.3922 1.3926		<0.03	48	-	-	<0.3	<1	Bal.		FeNi												Safety parts for gas boiler. electronic injectors. relays cores

Data between brackets correspond to unusual temperature levels T_c : Curie point ρ : Resistivity K : Conductivity UTS : Ultimate Tensile Strength