宝鸡难熔金属开发公司

Bao Ji Refractory Metal Developer Co.,Ltd

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NICKEL-BASE ALLOY PRODUCTS

PRECISION ALLOY——Elastic alloy

✧ Chemical Composition:

Grade	%	Ni	Cr	Fe	C	Mn	Si	P	S	Al	Ti
3J1	min	34.5	11.5	balance						1.0	2.7
	max	36.5	13.0		0.05	1.00	0.80	0.02	0.02	1.8	3.2
3J53	min	41.5	5.20	balance						0.5	2.3
	max	43.0	5.80		0.05	0.80	0.80	0.02	0.02	0.8	2.7

✧ Physical and mechanical properties:

Cold working	3J1	3J53
Elastic Modulus E / MPa	186500～206000	176500～191000
Shear modulus G / MPa	68500～78500	63500～73500
Density g / cm3	8.0	8.0
Mean coefficient of linear thermal expansion ä20-100° C / (10 一 6 / K)		8.5
Saturation Magnetic Induction B600 / T		O.7
Resistivity P / (μ Ω • m)	1.02	1.1
Magnetic susceptibility k / 106	150～250	
Vickers hardness HV	400～480	350—450
Note:Magnetic susceptibility values k = CGSM		

✧ Properties:

3J53、3J1 belong to the constant elastic alloy,High elasticity and strength after aging.Low temperature coefficient of the elastic modulus and corrosion-resistant in the -60-100℃

✧ Range of use:

Diaphragm in the manufacture of instrument industry, elastic elements such as diaphragm, bellows, springs, and more for the elastic sensing element

PRECISION ALLOY——Soft magnetic alloy

✧ Chemical Composition:

Anticorrosion soft magnetic alloy									
Grade	**%**	**Ni**	**Fe**	**Mn**	**Si**	**C**	**P**	**S**	**Cu**
1J36	min	35	balance						
	max	37		0.6	0.20	0.03	0.02	0.02	
1J46	min	45	balance	0.6	0.15				
	max	46.5		1.1	0.30	0.03	0.02	0.02	0.20

High permeability soft magnetic alloy										
Grade	**%**	**Ni**	**Fe**	**Mn**	**Si**	**Mo**	**C**	**P**	**S**	**Cu**
1J79	min	78.5	balance	0.6	0.30	3.8				
	max	80.0		1.1	0.50	4.1	0.03	0.02	0.02	0.2
1J85	min	79.0	balance	0.3	0.15	4.8				
	max	81.0		0.6	0.30	5.2	0.03	0.02	0.02	0.2

Temperature compensation soft magnetic alloy										
Grade	**%**	**Ni**	**Fe**	**Mn**	**Si**	**Al**	**Cr**	**C**	**P**	**S**
1J30	min	29.5	balance							
	max	30.5		0.4	0.30			0.04	0.02	0.02
1J31	min	30.5	balance							
	max	31.5		0.4	0.30			0.04	0.02	0.02
1J32	min	31.5	balance							
	max	32.5		0.4	0.30			0.04	0.02	0.02
1J33	min	32.8	balance	0.3	0.30	1.0				
	max	33.8		0.6	0.60	2.0		0.05	0.02	0.02
1J38	min	37.5	balance	0.3	0.15		12.5			
	max	38.5		0.6	0.30		13.5	0.05	0.02	0.02

✧ Properties:

Anticorrosion soft magnetic alloy——1J36、1J46
—High saturation flux density and low residual magnetic flux density —High permeability —Corrosion-resistant in the medium of water salt spray or hydrazine
High permeability soft magnetic alloy——1J79、1J85
—High initial permeability
Temperature compensation soft magnetic alloy——1J30、1J31、1J32、1J33、1J38
—Below the Curie temperature,Magnetic flux density increased linearly with temperature decreasing rapidly

✧ Range of use：

Anticorrosion soft magnetic alloy——1J36、1J46
—Electronic valves in the medium, temperature and pressure conditions of various control systems —Transformers, relays, electromagnetic clutch cores working in secondary magnetic field
High permeability soft magnetic alloy——1J79、1J85
—For the production of magnetic head shell, chips, isolation —Transformers, transformer, magnetic amplifier, choke coil cores working in weak magnetic fields and magnetic shielding
Temperature compensation soft magnetic alloy——1J30、1J31、1J32、1J33、1J38
—Magnetic shunt compensation element in the electromagnetic circuit and permanent magnetic circuit

✧ Physical properties:

Anticorrosion soft magnetic alloy

——1J36、1J46

Grade	Density g/cm3	Resistivity μΩ·m	Curie temperature ℃	Tensile strength MPa
1J36	8.1	0.80	230	450
1J46	8.2	0.45	400	735

High permeability soft magnetic alloy

——1J79、1J85

Grade	Resistivity μΩ·m	Density g/cm3	Curie temperature ℃	magnetostriction Coefficient ×10－2	Hardness HBs		Tensile strength MPa		Yield strength MPa		Elongation %	
					Cold	Soft	Cold	Soft	Cold	Soft	Cold	Soft
1J79	0.55	8.60	450	2.00	210	120	1030	560	980	150	3	50
1J85	0.56	8.75	400	0.50	—	—	—	—	—	—	—	—

Temperature compensation soft magnetic alloy

——1J30、1J31、1J32、1J33、1J38

Grade	Magnetic induction intensity at different temperatures (Magnetic field strength =8000A/m) B/T					Magnetic strength gap /T		
	-20℃	20℃	40℃	60℃	80℃	B-20℃～B20℃	B20℃～B40℃	B20℃～B80℃
1J30	0.40-0.60	0.02-0.45	—	0.02-0.13	—	—	—	—
1J31	0.60-0.85	0.40-0.65	—	0.15-0.45	—	—	—	—
1J32	0.80-1.10	0.60-0.95	—	0.40-0.75	—	—	—	—
1J33	—	0.40-0.70	—	—	0.1-0.4	—	—	0.22-0.42
1J38	0.25-0.42	0.05-0.24	0.015-0.12	—	—	0.16-0.24	0.035-0.15	—

✧ **Products show:**