
Kovar

Nickel Alloy Wire,Ribbon

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Alloys : Kovar (Nickel Alloy Wire,Ribbon)

It is an iron-nickel-cobalt alloy with a low coefficient of thermal expansion near room temperature among metals, and is widely used for electron tube materials, etc., as it is suitable for sealing with hard glass and ceramics.

Electrical Resistivity [$\mu\Omega\text{m}$]	Average TCR [$\times 10^{-6}/^{\circ}\text{C}$]
0.49	* 3500

(*)Reference value

Thermal Expansion Coefficient $\times 10^{-6}/$		Density g/cm ³ (20°C)	Melting Point °C
25-200°C	5.2	8.24	1450
25-300°C	5.1		
25-400°C	4.9		
25-45°C	5.3		
25-500°C	6.2		

Chemical Composition	C	Si	Mn	Ni	Co	Fe
(%)	≤ 0.015	≤ 0.5	≤ 1.0	28~30	15.5~17.5	BAL

Alloys	Type	Diameter (mm)
KOV	Wire	$\phi 5.00 \sim 0.03$
	Ribbon	Please consult

Kovar (Nickel Alloy Wire,Ribbon)

Resistance·Length·Weight

Wire Electrical Resistivity (23°CμΩm) 0.49 (*)Reference value

Diameter (mm)	Tolerance (mm)	Cross section (mm ²)	Resistance Tolerance (%)	DC Resistance (Ω/m)	Length (m/Kg)	Weight (g/m)
5.00	±0.060	19.6	±5	0.0250	6.18	162
4.50	±0.050	15.9	±5	0.0308	7.63	131
4.00	±0.050	12.6	±5	0.0390	9.65	104
3.50	±0.050	0.62	±6	0.0510	12.6	79.3
3.20	±0.040	8.04	±6	0.0610	15.1	66.3
2.90	±0.040	6.60	±6	0.0742	18.4	54.5
2.60	±0.040	5.31	±6	0.0923	22.8	43.8
2.30	±0.040	4.15	±6	0.118	29.2	34.3
2.00	±0.030	3.14	±6	0.156	38.6	25.9
1.80	±0.030	2.54	±6	0.193	47.7	21.0
1.60	±0.030	2.01	±7	0.244	60.3	16.6
1.50	±0.030	1.77	±7	0.277	68.6	14.6
1.40	±0.030	1.54	±7	0.318	78.8	12.7
1.30	±0.030	1.33	±7	0.369	91.4	10.9
1.20	±0.030	1.13	±7	0.433	107	9.33
1.10	±0.030	0.950	±7	0.516	128	7.84
1.00	±0.030	0.785	±7	0.624	154	6.48
0.90	±0.030	0.636	±7	0.771	191	5.25
0.85	±0.030	0.567	±7	0.864	214	4.68
0.80	±0.020	0.502	±7	0.975	241	4.14
0.75	±0.020	0.442	±7	1.11	275	3.64
0.70	±0.020	0.385	±7	1.27	315	3.17
0.65	±0.020	0.332	±7	1.48	365	2.74
0.60	±0.020	0.283	±7	1.73	429	2.33
0.55	±0.020	0.237	±8	2.06	510	1.96
0.50	±0.010	0.196	±8	2.50	618	1.62
0.45	±0.010	0.159	±8	3.08	763	1.31
0.40	±0.010	0.126	±8	3.90	965	1.04
0.35	±0.010	0.0962	±8	5.10	1260	0.793
0.32	±0.010	0.0804	±8	6.10	1508	0.663
0.29	±0.010	0.0660	±8	7.42	1836	0.545
0.26	±0.010	0.0531	±8	9.23	2284	0.438
0.23	±0.010	0.0415	±8	11.8	2919	0.343
0.20	±0.006	0.0314	±9	15.6	3860	0.259
0.18	±0.006	0.0254	±9	19.3	4766	0.210
0.16	±0.006	0.0201	±9	24.4	6032	0.166
0.15	±0.006	0.0177	±9	27.7	6863	0.146
0.14	±0.006	0.0154	±9	31.8	7878	0.127
0.13	±0.006	0.0133	±9	36.9	9137	0.109
0.12	±0.006	0.01130	±9	43.3	10723	0.0933
0.11	±0.006	0.00950	±9	51.6	12761	0.0784
0.10	±0.006	0.00785	±9	62.4	15441	0.0648
0.09	±0.005	0.00636	±10	77.1	19063	0.0525
0.08	±0.005	0.00502	±10	97.5	24127	0.0414
0.07	±0.005	0.00385	±10	127	31512	0.0317
0.06	±0.004	0.00283	±11	173	42892	0.0233
0.05	±0.004	0.00196	±11	250	61764	0.0162
0.04	±0.003	0.00126	±12	390	96506	0.0104
0.03	±0.003	0.000707	±12	694	171567	0.00583