PRODUCT DATASHEET / 2026

IRON–CHROMIUM–ALUMINIUM RESISTANCE & HEATING ALLOY · 高电阻稀土铁铬铝合金

0Cr24Al6RE

GB/T 1234-2012 · RE-modified · Al 5–7 %

1.48 μΩ·m and rare-earth stabilised: shorter elements, longer life and better resistance to green rot and sulphur.

高电阻稀土铁铬铝——电阻率 1.48 μΩ·m，元件更短、寿命更长，抗绿腐与含硫气氛。

0Cr24Al6RE combines a nominal 1.48 μΩ·m resistivity with rare-earth additions totalling 0.04–1.0 %. Higher resistivity means shorter wire for the same power and voltage, saving material and stiffening the element.

The rare earths refine the grain structure and peg the scale to the substrate, so the oxide does not flake off after repeated heating and cooling. Resistance to green rot and to sulphur-bearing or mildly reducing atmospheres beats ordinary Fe–Cr–Al, and room-temperature ductility is better than standard grades.

SPECIFICATION 规格

ALLOY TYPE 合金类型
Ferritic Fe–Cr–Al–RE

STRUCTURE 晶体结构
Ferrite

MAGNETIC 磁性
Magnetic

STANDARDS 标准
GB/T 1234-2012

01 CHEMICAL COMPOSITION 化学成份

WT. % · GB/T 1234-2012

C	P	S	Mn	Si	Cr	Ni	Al	Fe	RE
≤0.04	≤0.025	≤0.02	≤0.5	≤0.4	22.0–26.0	≤0.6	5.0–7.0	Remainder	0.04–1.0

02 PHYSICAL PROPERTIES 物理性能

TYPICAL VALUES

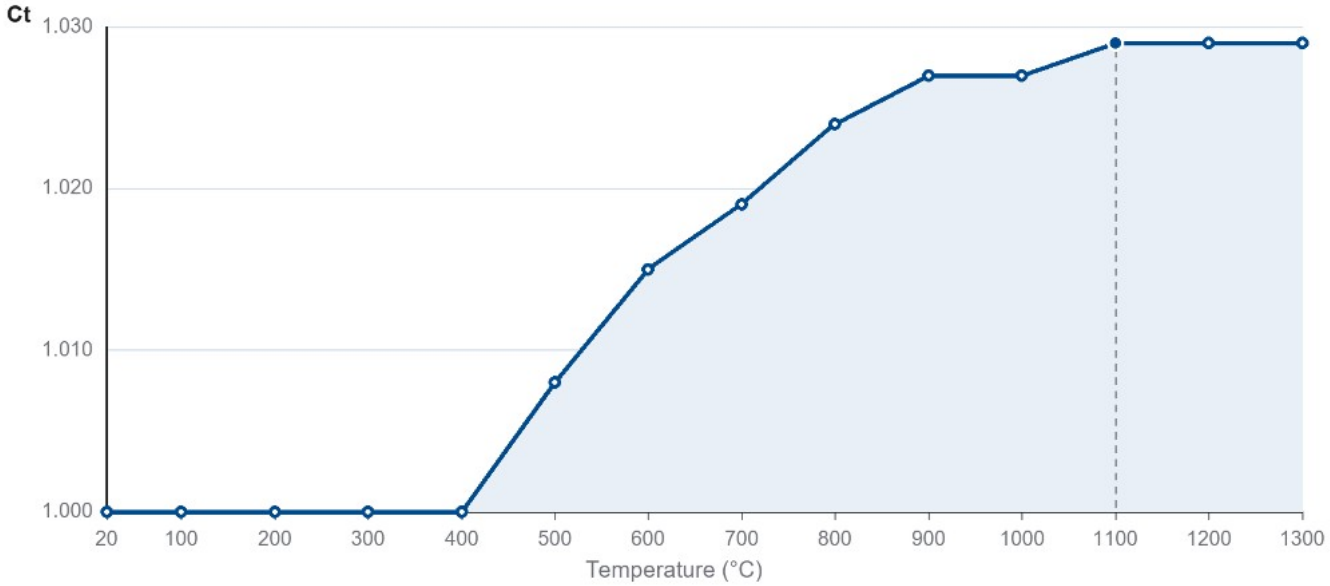
Max. Working Temp.	**1400 °C**	Resistivity at 20 °C (μΩ·m)	**1.48±0.07**
Density	**7.1 g/cm³**	Thermal conductivity (20 °C)	**13 W/(m·K)**
Average linear expansion coefficient (20-1000 °C)	**16.0×10⁻⁶/K**	Specific heat capacity	**0.49 J/(g·K)**
Approx. melting point	**1520 °C**	Elongation after Fracture (A/%)	**Ø≤3.0 mm: ≥10%** **Ø>3.0 mm: ≥12%**
Tensile strength (Rm /MPa)	**≥680**	Accelerated life test	**≥80 h/1350 °C**
Micrographic structure	**Ferrite**	Magnetic properties	**Magnetic**

03 TEMPERATURE BEHAVIOUR 温度特性

CT · GB/T 1234-2012

Resistance rises predictably with temperature

Ct is the factor by which the 20 °C resistance is multiplied at a given temperature. Standards publish it as a table; plotted here, intermediate values can be read at a glance.



Where the curve is used: $R(T) = R_{20} \times Ct$. From 100 to 1300 °C the factor ranges from 1.000 to 1.029 (+0.0 % to +2.9 %); at constant voltage the power at temperature is P_{20} / Ct.

04 CT BY TEMPERATURE 温度系数表

°C · FACTOR

°C	20	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300
Ct	1.000	1.00	1.00	1.00	1.00	1.008	1.015	1.019	1.024	1.027	1.027	1.029	1.029	1.029

05 PERFORMANCE 性能要点

VERIFIED DATA

Resistivity
1.48 μΩ·m — shorter elements, less material.

Corrosion
Better green-rot and sulphur resistance than plain FeCrAl.

Scale adhesion
Rare-earth pegging keeps the Al_2O_3 layer in place.

Installation
Better room-temperature ductility than standard FeCrAl.

06 APPLICATIONS 应用领域

SERVICE-PROVEN SECTORS

Compact elements
high-power, short-length designs

Industrial furnaces
continuous and batch duty

Sulphur-bearing atmospheres
chemical and metallurgical furnaces

Ceramic kilns
element and radiant-tube service

Mildly reducing atmospheres
controlled process gas

RELATED GRADES · 同系列牌号

0Cr25Al5 · 0Cr21Al6Nb · 0Cr23Al5 · 0Cr20Al3 · 0Cr20Al6RE · 0Cr27Al7Mo2 · 1Cr13Al4

Same production route and quality system; matched surface finishes available on request.

07 TECHNICAL PARAMETERS 技术参数

GB/T 1234-2012

Metric wire table: resistance, length and mass

Diameter (mm)	Ω/m at 20 °C	m per kg	g per m	Diameter (mm)	Ω/m at 20 °C	m per kg	g per m
0.05	753.758	71731.87	0.01394	**1.1**	1.5574	148.21	6.74735
0.06	523.443	49813.80	0.02007	**1.2**	1.3086	124.53	8.02990
0.07	384.571	36597.89	0.02732	**1.3**	1.1150	106.11	9.42398
0.08	294.437	28020.26	0.03569	**1.4**	0.9614	91.49	10.92959
0.09	232.641	22139.46	0.04517	**1.5**	0.8375	79.70	12.54673
0.1	188.440	17932.97	0.05576	**1.6**	0.7361	70.05	14.27538
0.11	155.735	14820.63	0.06747	**1.7**	0.6520	62.05	16.11557
0.12	130.861	12453.45	0.08030	**1.8**	0.5816	55.35	18.06728
0.13	111.503	10611.22	0.09424	**1.9**	0.5220	49.68	20.13052
0.15	83.751	7970.21	0.12547	**2.0**	0.4711	44.83	22.30529
0.17	65.204	6205.18	0.16116	**2.2**	0.3893	37.05	26.98940
0.19	52.199	4967.58	0.20131	**2.4**	0.3272	31.13	32.11962
0.21	42.730	4066.43	0.24592	**2.6**	0.2788	26.53	37.69594
0.25	30.150	2869.27	0.34852	**2.8**	0.2404	22.87	43.71837
0.27	25.849	2459.94	0.40651	**3.0**	0.2094	19.93	50.18690
0.29	22.407	2132.34	0.46897	**3.2**	0.1840	17.51	57.10154
0.31	19.609	1866.07	0.53588	**3.4**	0.16301	15.51	64.46229
0.35	15.383	1463.92	0.68310	**3.6**	0.14540	13.84	72.26914
0.40	11.777	1120.81	0.89221	**3.8**	0.13050	12.42	80.52209
0.45	9.306	885.58	1.12921	**4.0**	0.11777	11.21	89.22116
0.50	7.538	717.32	1.39408	**4.5**	0.09306	8.86	112.92053
0.55	6.229	592.83	1.68684	**5.0**	0.07538	7.17	139.40806
0.60	5.234	498.14	2.00748	**5.5**	0.06229	5.93	168.68375
0.65	4.460	424.45	2.35600	**6.0**	0.05234	4.98	200.74760
0.70	3.846	365.98	2.73240	**6.5**	0.04460	4.24	235.59962
0.80	2.944	280.20	3.56885	**7.0**	0.03846	3.66	273.23979
0.85	2.608	248.21	4.02889	**7.5**	0.03350	3.19	313.66813
0.90	2.326	221.39	4.51682	**8.0**	0.02944	2.80	356.88462
0.95	2.088	198.70	5.03263	**8.5**	0.02608	2.48	402.88928
1.00	1.884	179.33	5.57632	**9.0**	0.02326	2.21	451.68210

Resistance tolerance 0.03–0.06 mm ±10 % · 0.07–0.12 mm ±8 % · 0.13–0.17 mm ±7 % · 0.18–0.32 mm ±6 % · above 0.32 mm ±5 %.

08 SUPPLY FORMS 供货规格

OTHER SIZES ON REQUEST

WIRE
0.05–1.6 mm
Bright, soft annealed

WIRE
1.0–12.0 mm
Acid-pickled finish

ROD
6.0–150.0 mm
Drawn and annealed

FLAT WIRE
0.2–6.0 × 0.08–1.0 mm
Width × thickness

RIBBON
5.0–300 × 0.05–4.0 mm
Width × thickness

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Founded 1990 · formerly Danyang Resistance Wire Factory · ISO 9001:2015 · 1,500 t per year · about half exported