PRODUCT DATASHEET / 2026

IRON–CHROMIUM–ALUMINIUM RESISTANCE & HEATING ALLOY · 高铬高铝钼铁铬铝合金

0Cr27Al7Mo2

GB/T 1234-2012 · Mo 1.8–2.2 % · Al 6–7 %

2 % molybdenum and 7 % aluminium make this the most sag-resistant iron-based element available — horizontal duty to 1400 °C.

含 2% 钼、7% 铝，抗下垂最强的铁基电热合金——卧式安装可用至 1400 °C。

0Cr27Al7Mo2 is the strongest of the Fe–Cr–Al family. Molybdenum acts as a solid-solution strengthener, so at 1350–1400 °C horizontal elements barely sag where 0Cr25Al5 softens and fails.

High chromium and high aluminium build a thicker, denser Al_2O_3 film and slow grain growth, so the alloy stays tough after long service above 1350 °C. It fills the gap between ordinary Fe–Cr–Al and refractory metals in oxidising atmospheres.

SPECIFICATION 规格

ALLOY TYPE 合金类型
Ferritic Fe–Cr–Al–Mo

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	Mo
≤0.05	≤0.025	≤0.02	≤0.5	≤0.4	26.5–27.8	≤0.6	6.0–7.0	Remainder	1.8–2.2

02 PHYSICAL PROPERTIES 物理性能

TYPICAL VALUES

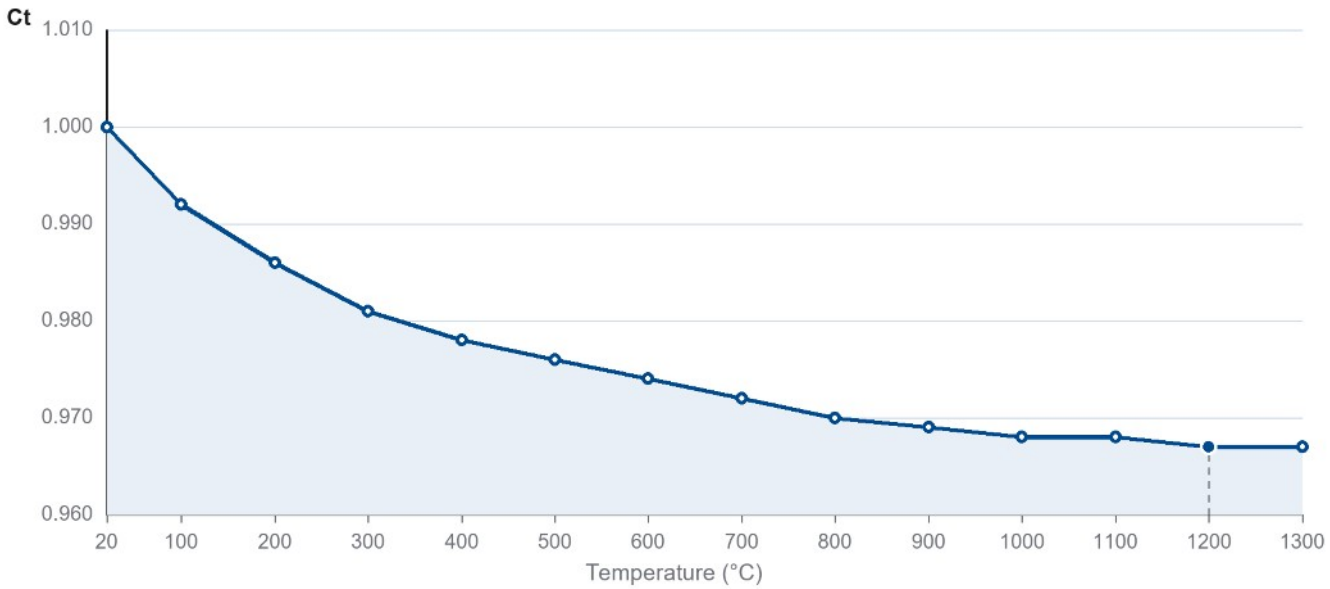
Max. Working Temp.	**1400 °C**	Resistivity at 20 °C (μΩ·m)	**1.53±0.07**
Density	**7.1 g/cm³**	Thermal conductivity (20 °C)	**13 W/(m·K)**
Average linear expansion coefficient (20-1000 °C)	**16.0×10⁻⁶/K**	Specific heat capacity	**0.49 J/(g·K)**
Approx. melting point	**1520 °C**	Elongation after Fracture (A/%)	**≥10%**
Tensile strength (Rm /MPa)	**≥680**	Accelerated life test	**≥50 h/1350 °C**
Micrographic structure	**Ferrite**	Magnetic properties	**Magnetic**

03 TEMPERATURE BEHAVIOUR 温度特性

CT · GB/T 1234-2012

Resistance falls gently as temperature rises

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 0.967 to 0.992 (−3.3 % to −0.8 %); 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	0.992	0.986	0.981	0.978	0.976	0.974	0.972	0.970	0.969	0.968	0.968	0.967	0.967

05 PERFORMANCE 性能要点

VERIFIED DATA

Sag resistance
Molybdenum-strengthened: almost no sag at 1350–1400 °C.

Temperature
1400 °C continuous, 1425 °C short-term.

Grain control
Fine grains and toughness survive long service above 1350 °C.

Life
≥50 h accelerated test at 1350 °C.

06 APPLICATIONS 应用领域

SERVICE-PROVEN SECTORS

Tunnel and pusher kilns
long horizontal heating elements

Large industrial furnaces
high-temperature heating zones

Ceramic and glass furnaces
1400 °C class duty

Radiant tube assemblies
minimal support structures

Refractory-metal replacement
oxidising atmospheres below 1400 °C

RELATED GRADES · 同系列牌号

0Cr25Al5 · 0Cr21Al6Nb · 0Cr23Al5 · 0Cr20Al3 · 0Cr20Al6RE · 0Cr24Al6RE · 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	779.223	71731.87	0.01394	**1.1**	1.6100	148.21	6.74735
0.06	541.127	49813.80	0.02007	**1.2**	1.3528	124.53	8.02990
0.07	397.563	36597.89	0.02732	**1.3**	1.1527	106.11	9.42398
0.08	304.384	28020.26	0.03569	**1.4**	0.9939	91.49	10.92959
0.09	240.501	22139.46	0.04517	**1.5**	0.8658	79.70	12.54673
0.1	194.806	17932.97	0.05576	**1.6**	0.7610	70.05	14.27538
0.11	160.997	14820.63	0.06747	**1.7**	0.6741	62.05	16.11557
0.12	135.282	12453.45	0.08030	**1.8**	0.6013	55.35	18.06728
0.13	115.270	10611.22	0.09424	**1.9**	0.5396	49.68	20.13052
0.15	86.580	7970.21	0.12547	**2.0**	0.4870	44.83	22.30529
0.17	67.407	6205.18	0.16116	**2.2**	0.4025	37.05	26.98940
0.19	53.963	4967.58	0.20131	**2.4**	0.3382	31.13	32.11962
0.21	44.174	4066.43	0.24592	**2.6**	0.2882	26.53	37.69594
0.25	31.169	2869.27	0.34852	**2.8**	0.2485	22.87	43.71837
0.27	26.722	2459.94	0.40651	**3.0**	0.2165	19.93	50.18690
0.29	23.164	2132.34	0.46897	**3.2**	0.1902	17.51	57.10154
0.31	20.271	1866.07	0.53588	**3.4**	0.1685	15.51	64.46229
0.35	15.903	1463.92	0.68310	**3.6**	0.1503	13.84	72.26914
0.40	12.175	1120.81	0.89221	**3.8**	0.1349	12.42	80.52209
0.45	9.620	885.58	1.12921	**4.0**	0.1218	11.21	89.22116
0.50	7.792	717.32	1.39408	**4.5**	0.0962	8.86	112.92053
0.55	6.440	592.83	1.68684	**5.0**	0.0779	7.17	139.40806
0.60	5.411	498.14	2.00748	**5.5**	0.0644	5.93	168.68375
0.65	4.611	424.45	2.35600	**6.0**	0.0541	4.98	200.74760
0.70	3.976	365.98	2.73240	**6.5**	0.0461	4.24	235.59962
0.80	3.044	280.20	3.56885	**7.0**	0.0398	3.66	273.23979
0.85	2.696	248.21	4.02889	**7.5**	0.0346	3.19	313.66813
0.90	2.405	221.39	4.51682	**8.0**	0.0304	2.80	356.88462
0.95	2.159	198.70	5.03263	**8.5**	0.0270	2.48	402.88928
1.00	1.948	179.33	5.57632	**9.0**	0.0241	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

江苏禾一电热材料有限公司 Jiangsu Heyi Electric Heating Material Co., Ltd

江苏省丹阳市吕城镇养正东路 42 号 No.42 Yangzheng East Road, Lvcheng Town, Danyang City, Jiangsu, China

TEL +86 511 8605 2233 MAIL sales@heyiheating.com WEB www.heyiheating.com

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