PRODUCT DATASHEET / 2026

IRON–CHROMIUM–ALUMINIUM RESISTANCE & HEATING ALLOY · 通用型铁铬铝合金

0Cr23Al5

Kanthal D · Aluchrom 5 · Alloy 815

Slightly leaner than 0Cr25Al5, easier to process and no less protective — the default choice for 1100–1300 °C elements.

通用型铁铬铝——性能接近 0Cr25Al5，加工性更好、成本更低。

0Cr23Al5 sits just below 0Cr25Al5 in chromium and is correspondingly easier to draw, form and weld, at lower cost. Resistivity and oxidation behaviour stay close enough that most 0Cr25Al5 elements can be re-specified in this grade without redesign.

For 1100–1300 °C service where cost and machinability matter it is the practical choice; where toughness, weldability or thermal-fatigue performance dominate, a nickel-chromium grade remains the better answer.

SPECIFICATION 规格

ALLOY TYPE 合金类型
Ferritic Fe–Cr–Al

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
≤0.06	≤0.025	≤0.02	≤0.5	≤0.6	20.5–23.5	≤0.6	4.2-5.3	Remainder

02 PHYSICAL PROPERTIES 物理性能

TYPICAL VALUES

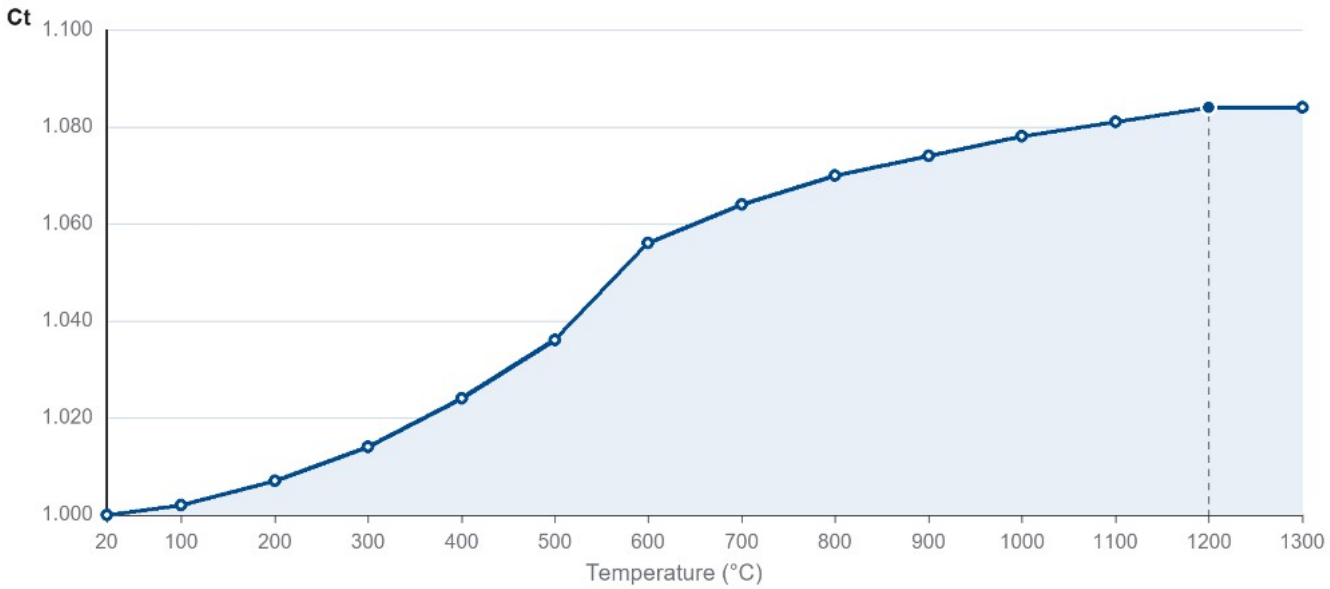
Max. Working Temp.	**1300 °C**	Resistivity at 20 °C (μΩ·m)	**1.35±0.06**
Density	**7.25 g/cm³**	Thermal conductivity (20 °C)	**13 W/(m·K)**
Average linear expansion coefficient (20-1000 °C)	**15.0 α×10⁻⁶/K**	Specific heat capacity	**0.46 J/(g·K)**
Approx. melting point	**1500 °C**	Elongation after Fracture (A/%)	**Ø≤3.0 mm: ≥12% Ø>3.0 mm: ≥15%**
Tensile strength (Rm /MPa)	**≥600**	Accelerated life test	**≥80 h/1300 °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 1.002 to 1.084 (+0.2 % to +8.4 %); 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	1.002	1.007	1.014	1.024	1.036	1.056	1.064	1.070	1.074	1.078	1.081	1.084	1.084

05 PERFORMANCE 性能要点

VERIFIED DATA

Processability
Better toughness and machinability than 0Cr25Al5.

Resistivity
1.35 μΩ·m at 20 °C.

Service range
1100–1300 °C behind a dense Al_2O_3 scale.

Cost
Nickel-free and economical in volume production.

06 APPLICATIONS 应用领域

SERVICE-PROVEN SECTORS

Industrial electric furnaces
1100–1300 °C heating elements

Household heating
appliance elements at medium temperature

Heat-treatment equipment
retorts and fixtures

Radiant panels
strip and ribbon elements

Kilns and dryers
ceramic and glass duty

TRADE NAMES · 商品牌号

Kanthal D · Alloy 815 · Alchrome DK · Alferon 901 · Resistohm 135 · Aluchrom 5 · Stablohm 812 · KD · Aluchrom I · Alferon 20 · Alloy K · X23Ю5

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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	687.550	70247.76	0.01424	**1.1**	1.4206	145.14	6.88990
0.06	477.465	48783.17	0.02050	**1.2**	1.1937	121.96	8.19955
0.07	350.791	35840.69	0.02790	**1.3**	1.0171	103.92	9.62308
0.08	268.574	27440.53	0.03644	**1.4**	0.8770	89.60	11.16050
0.09	212.207	21681.41	0.04612	**1.5**	0.7639	78.05	12.81180
0.1	171.887	17561.94	0.05694	**1.6**	0.6714	68.60	14.57698
0.11	142.056	14514.00	0.06890	**1.7**	0.5948	60.77	16.45604
0.12	119.366	12195.79	0.08200	**1.8**	0.5305	54.20	18.44899
0.13	101.709	10391.68	0.09623	**1.9**	0.4761	48.65	20.55582
0.15	76.394	7805.31	0.12812	**2.0**	0.4297	43.90	22.77653
0.17	59.477	6076.80	0.16456	**2.2**	0.3551	36.28	27.55960
0.19	47.614	4864.80	0.20556	**2.4**	0.2984	30.49	32.79820
0.21	38.977	3982.30	0.25111	**2.6**	0.2543	25.98	38.49233
0.25	27.502	2809.91	0.35588	**2.8**	0.2192	22.40	44.64199
0.27	23.579	2409.05	0.41510	**3.0**	0.1910	19.51	51.24719
0.29	20.438	2088.22	0.47888	**3.2**	0.1679	17.15	58.30791
0.31	17.886	1827.47	0.54721	**3.4**	0.1487	15.19	65.82416
0.35	14.032	1433.63	0.69753	**3.6**	0.1326	13.55	73.79595
0.40	10.743	1097.62	0.91106	**3.8**	0.1190	12.16	82.22326
0.45	8.488	867.26	1.15306	**4.0**	0.1074	10.98	91.10611
0.50	6.875	702.48	1.42353	**4.5**	0.0849	8.67	115.30617
0.55	5.682	580.56	1.72247	**5.0**	0.0688	7.02	142.35330
0.60	4.775	487.83	2.04989	**5.5**	0.0568	5.81	172.24749
0.65	4.068	415.67	2.40577	**6.0**	0.0477	4.88	204.98875
0.70	3.508	358.41	2.79012	**6.5**	0.0407	4.16	240.57707
0.80	2.686	274.41	3.64424	**7.0**	0.0351	3.58	279.01246
0.85	2.379	243.07	4.11401	**7.5**	0.0306	3.12	320.29492
0.90	2.122	216.81	4.61225	**8.0**	0.0269	2.74	364.42444
0.95	1.905	194.59	5.13895	**8.5**	0.0238	2.43	411.40103
1.00	1.719	175.62	5.69413	**9.0**	0.0212	2.17	461.22468

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
Pickled · golden 1.2–3.9 · blue 4.0–10.0

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