HEATING CONDUCTOR ALLOY

1.4725 (CrAl 14 4)

Excellence in Specialty Steel

Material Designation

1.4725 DIN

Standards

DIN 17470
ASTM B 603
(Class III, chem. analysis and electrical resistivity only)

Chemical Composition

	Cr	Al	Fe
Alloying Content[1] [wt.-%]	14.0	min. 4.0	Bal.

Properties

1.4725 (CrAl 14 4) is a ferritic iron-chromium-aluminum alloy (FeCrAl) with high electrical resistance and good corrosion resistance in chemically demanding environments with oxidizing, sulfur-containing, or carburizing atmospheres. 1.4725 is magnetic up to approx. 600 °C and is suitable for applications with operating temperatures up to 1000 °C[2].

Area of Application and Typical Applications Examples

1.4725 is used in high-temperature load or braking resistors. Other areas of application include rheostats, heating cables, and heating coils in household appliances.

Delivery Conditions

- Wire annealed or annealed, pre-oxidized (coils, barrels, on spools up to 3.0 mm possible)
- Straightened bars
- Alternative delivery conditions on request

Physical Properties

Melting Temperature [°C]	1500
Max. Operating Temperature [°C]	1000[2]

Properties at Room Temperature	
Electrical Resistivity [Ω mm²/m]	1.25
Thermal Conductivity [W/m·K]	15
Specific Heat Capacity [kJ/kg·K]	0.48
Density [g/cm³]	7.3

[1] In accordance with DIN 17470 and ASTM B 603, additional alloying elements are permitted to optimize the physical and technological properties.
[2] Temperature valid for wire > 2.0 mm in air.

Quality

- ISO 9001
- ISO 14001
- ISO 50001
- Approvals acc. to standards like ABS, BV, DNV ...
- Customer specific approval certificates

Innovation

- Fully automated phased-array-ultrasonic testing up to dia. 1000 mm
- CO_2-reduction by innovative heat treatment solutions

Flexibility

- Product range from fine wire to forging
- Directly from stock close at hand

Individuality

- Dimensions
- Tolerances
- Surface qualities
- Delivery conditions

Your personal contact:

BGH Edelstahlwerke GmbH

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Physical Properties

Temperature Coefficient of Electrical Resistivity[3]

Temperature [°C]	20	200	400	600	800	1000
Temperature Coefficient	1.00	1.02	1.04	1.07	1.11	1.14

Average Value of Thermal Expansion Coefficient[3]

Temperature [°C]	20-400	20-800	20-1000
Thermal Expansion Coefficient x [10^{-6}/K]	12	14	15

Mechanical Properties room temperature, annealed condition, nominal values

Dimension [mm]	Tensile Strength [MPa]	Elongation [%]	Hardness HV[4]
0.060 – 0.125	680	10	210
> 0.125 – 1.00	650	15	200
> 1.00	620	20	190
> 2.50	600	20	185

Creep Strength 1%-1000h reference values[3]

Temperature [°C]	600	700	800	900	1000
Creep Strength [MPa]	16	8	4	2	0.8

[3] In accordance with DIN 17470
[4] Calculated from tensile strength, rounded values

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