

Material Designation

1.4765 DIN
K92500 UNS
CrAl 25-5

Standards

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

Chemical Composition

	Cr	Al	Fe
Alloying Content ¹ [wt.-%]	22.0 – 25.0	min. 5.0	Bal.

Properties

BGH FecroTHERM 25-5 is a ferritic iron-chromium-aluminum alloy (FeCrAl) that is particularly suitable for use in high-temperature applications above 1000 °C due to the formation of a stable Al₂O₃ layer. The material is characterized by high scale resistance, high electrical resistivity, and excellent corrosion resistance in chemically demanding environments with oxidizing, sulfur-containing, or carburizing atmospheres. **BGH FecroTHERM 25-5** is magnetic up to approx. 600 °C and is suitable for applications with operating temperatures up to 1400 °C².

Area of Application and Typical Applications Examples

BGH FecroTHERM 25-5 is used as a heating element in high-temperature or sintering furnaces, particularly at high operating temperatures. Typical areas of application are electric furnaces for industrial heat treatment, the glass and ceramics industry, and the chemical industry.

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]	1400 ²

Properties at Room Temperature

Electrical Resistivity [Ω mm ² /m]	1.44
Thermal Conductivity [W/m·K]	13
Specific Heat Capacity [kJ/kg·K]	0.46
Density [g/cm ³]	7.1

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
- CO₂-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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01705 Freital
+49 351 646-0
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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.

Physical Properties

Temperature Coefficient of Electrical Resistivity ³								
Temperature [°C]	20	200	400	600	800	1000	1200	1400
Temperature Coefficient	1.00	1.00	1.01	1.01	1.03	1.03	1.04	1.05

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	780	8	240
> 0.125 – 1.00	750	10	235
> 1.00	730	15	230
> 2.50	680	16	210

Creep Strength 1%-1000h reference values ³							
Temperature [°C]	600	700	800	900	1000	1100	1200
Creep Strength [MPa]	40	15	6.0	2.5	1.0	0.3	0.1

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⁴Calculated from tensile strength, rounded values