Ni20Cr25

Ni20Cr25 is an austenitic nickel-chromium alloy suitable for temperature applications up to 1050°C.

This alloy is characterized by high resistivity, moderate oxidation resistance, good ductility after use and excellent weldability.

By its properties, Ni20Cr25 lays at the limit between heat-resistance alloys and stainless steel.

Typical applications: heating element fasteners, electric furnaces (especially hardening furnaces), refractory anchor bolts, etc.

1. Chemical composition

Nom. composition, %	C	Si	Mn	Ni	Cr	Al	Fe
min	-	1.50	-	19.00	23.00	-	Bal
max	0.10	2.50	1.50	21.00	25.00	0.30	

2. Mechanical properties

Wire size, mm	Yield Strength, $R_{p0.2}$ (MPa)	Tensile Strength, R_m (MPa)	Hardness, HV	Elongation, A (%)
1.00	335	675	160	≥ 18

3. Physical properties

Density, g/cm^3	7.80
Electrical resistivity at 20°C, Ω mm^2/m	0.95
Thermal conductivity at 20°C, W/mk	12.90
Melting point, °C	1380
Max operating temperature, °C	1050

Creep strength, MPa R_p 1.0/10^3 h	600°C	100.00
	800°C	20.00
	1000°C	4.00
Magnetic properties		nonmagnetic

4. Temperature factor of resistivity

Temperature, °C	20	100	200	300	400	500	600	700	800	900	1000	1100
Kt	1.00	1.044	1.084	1.141	1.168	1.221	1.242	1.263	1.284	1.302	1.326	1.340

5. Coefficient of liner thermal expansion

Temperature, °C	20	200	400	500	600	800	1000
α x 10^{-6} /K	-	16.00	17.00	-	17.50	18.00	19.00

Note: All information enclosed in this datasheet is based on our best knowledge and is given as indicative. Other special requirements are subject to prior discussion and approval of Vojay. Please contact us for any additional information or request.