

## Physical and mechanical properties

		Cuprothal® 49	Cuprothal 30	Cuprothal 15	Cuprothal 10	Cuprothal 05
Nominal composition, %	Ni	44	23	11	6	2
	Cu	balance	balance	balance	balance	balance
	Fe	+	-	-	-	-
	Mn	1	1.5	-	-	-
Density $\rho$	g/cm <sup>3</sup> (lb/in <sup>3</sup> )	8.90 (0.321)	8.90 (0.321)	8.90 (0.321)	8.90 (0.321)	8.90 (0.321)
Resistivity at 20°C at 68°F	$\Omega$ mm <sup>2</sup> /m ( $\Omega$ /cmf)	0.49 (295)	0.30 (180)	0.15 (90)	0.10 (60)	0.05 (30)
Temperature factor of the resistivity, $C_t$ -55–150°C (-67–300°F) 20–105°C (68–220°F)		$\pm 20/\pm 60$	250	400	700	1300
Temperature range	°C (°F)	-55–150 (-67–300)	20–105 (68–220)	20–105 (68–220)	20–105 (68–220)	20–105 (68–220)
Linear thermal expansion coefficient $\alpha$ , $\times 10^{-6}/K$ 20–100°C (68–210°F)		14	16	16	16	16.5
Thermal conductivity $\lambda$ at 50°C at 122°F	W/m K (Btu in/ft <sup>2</sup> h °F)	21 (146)	35 (243)	60 (460)	90 (624)	130 (901)
Specific heat capacity at 20°C at 68°F	kJ/kg K (Btu/lb °F)	0.41 (0.098)	0.37 (0.088)	0.38 (0.091)	0.38 (0.091)	0.38 (0.091)
Melting point (approx.)	°C (°F)	1280 (2336)	1150 (2102)	1100 (2012)	1095 (2003)	1090 (1994)
<b>Mechanical properties* (approx.)</b>						
Tensile strength, min	N/mm <sup>2</sup> (psi)	420 (60900)	340 (49300)	250 (36200)	230 (33350)	220 (31900)
Tensile strength, max	N/mm <sup>2</sup> (psi)	690 (100100)	690 (100100)	540 (78300)	680 (98600)	440 (63800)
Elongation at rupture	%	30	30	30	30	30
Magnetic properties		non-magnetic				