

Fuse Wires

Wire

A fuse wire is used in incandescent and fluorescent tube lamps as circuit breakers when conditions of over-current or over-loading arise. Fuse wire makes up the outer-lead of one or both lead-in-wires. The following alloys can be used for fuse wires: NiCu30Fe, FeCrAl125, or FeNi43.

Nominal Chemical Composition (%)								
Alloy	Ni	Mn	Fe	Si	Cu	C	Al	Ti
NiCu30Fe	Min 63	Max 1.25	1.0- 2.5	Max 0.50	28-34	Max 0.15	Max 0.50	Max 0.20
Alloy	Fe	Cr	C	Al				
FeCrAl125	Balance	14-16	Max 0.10	3.5-5.0				
Alloy	Ni	C	Mn	Si	S	P	Fe	
FeNi43	41-43	Max 0.05	Max 1.0	Max 0.3	Max 0.02	Max 0.02	Balance	

Physical properties (at room temperature)			
Alloy	Density g/cm ³	Specific Resistance (Electrical Resistivity) μΩ-cm	Thermal Linear Expansion Coeff. b/w 20-100°C 10 ⁻⁶ /°C
NiCu30Fe	8.80	51	13.9
FeCrAl125	7.30	125	14.0
FeNi43	8.11	61	5.3

Mechanical Properties (for cold drawn annealed wire)				
Alloy	Tensile strength N/mm ²		Elongation % at L ₀ =100 mm	
	Min	Max	Min	Max
NiCu30Fe	450	650	20	30
FeCrAl125	-	750	15	-
FeNi43	400	600	25	35

Size Range			
Form	Dia (mm)	Width (mm)	Thickness (mm)
Wire	0.15-1.50	-	-