Copper-Nickel-Alloys

Auerhammer Metallwerk
Wickeder Group

1. Alloys

Alloy	Material | UNS No.	Standard
CuNi8		
CuNi10	2.0811 / C70700	DIN 17471
CuNi15		
CuNi20	CN104 / C71000	BS 2870
CuNi30	C71580	
CuNi44Mn1	2.0842 / N04401 / C72150	DIN 17664
CuNi10Fe1Mn	CW352H / C70600	EN 1652 / ASTM B122
CuNi30Mn1Fe	CW354H / C71500	EN 1652 / ASTM B122

2. Chemical composition (Reference values in % w/w)

Alloy	Ni (+Co)	Cu	Fe	Mn	C
CuNi8	≤ 8.0	balance	≤ 0.1	≤ 0.3	
CuNi10	≤ 11.0	balance	≤ 0.1	≤ 0.3	
CuNi15	14.0 - 16.0	balance	≤ 0.3	≤ 0.5	
CuNi20	19.0 - 20.0	balance	≤ 0.2	≤ 0.5	
CuNi30	29.0 - 32.0	balance	≤ 0.5	≤ 0.3	≤ 0.1
CuNi44Mn1	43.0 - 45.0	balance	≤ 0.5	0.5 - 2.0	≤ 0.1
CuNi10Fe1Mn	9.0 - 11.0	balance	1.0 - 1.8	0.5 - 1.0	≤ 0.1
CuNi30Mn1Fe	30.0 - 32.0	balance	0.4 - 1.0	0.4 - 1.0	≤ 0.1

3. Physical properties

Alloy	Density	Specific electrical resistivity at 20 °C	Average linear thermal expansion coefficient 20 °C - 100 °C	Thermal conductivity at 20 °C
	g /cm³	Ω • mm²/m	10^{-6}/K	W/m • K
CuNi8	8.9	0.125	16	75
CuNi10	8.9	0.15	16	59
CuNi15	8.9	0.21		
CuNi20	8.9	0.265	15	49
CuNi30	8.9	0.37	15	39
CuNi44Mn1	8.9	0.49	13.5	22
CuNi10Fe1Mn	8.9	0.17	17	48
CuNi30Mn1Fe	8.9	0.37	16	25

11/19

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4. Mechanical properties (Reference values soft-annealed condition)

Alloy	0.2 % Yield strength	Tensile strength	Elongation	Vickers hardness
	MPa	MPa	%	HV
CuNi8	100	260	45	max. 80
CuNi10	115	270	45	max. 85
CuNi15	140	300	45	max. 85
CuNi20	150	330	40	max. 85
CuNi30	150	330	40	max. 85
CuNi44Mn1	200	460	30	max. 115
CuNi10Fe1Mn	150	340	40	max. 120
CuNi30Mn1Fe	180	400	45	max. 120

5. Dimensions and tolerances: Thickness & Width (in mm)

Thickness	Width 10 - 320
0.10 - 0.20	+/- 0.020
> 0.20 - 0.40	+/- 0.030
> 0.40 - 0.50	+/- 0.040
> 0.50 - 0.80	+/- 0.050
> 0.80 - 1.20	+/- 0.060
> 1.20 - 1.80	+/- 0.080
> 1.80 - 2.50	+/- 0.090
> 2.50 - 3.00	+/- 0.100

Width	Thickness 0.10 - 1.00	Thickness > 1.00 - 2.00	Thickness > 2.00 - 2.50	Thickness > 2.50 - 3.00
10 - 50	+ 0.2	+ 0.3	+ 0.5	+ 1.0
> 50 - 100	+ 0.3	+ 0.4	+ 0.6	+ 1.1
> 100 - 200	+ 0.4	+ 0.5	+ 0.7	+ 1.2
> 200 - 320	+ 0.6	+ 1.0	+ 1.2	+ 1.5

Length (in mm)

Thickness	Length 500 - 3000
0.40 - 2.00	+ 10

6. Delivery forms (in mm)

Form	Thickness	Width	Length	Coil-ID	Coil-OD
Coil	0.10 - 2.50	10 - 320		300 / 400 / 500	max. 1050
Strip / Sheet	0.40 - 2.00	50 - 320	500 - 3000		

Important Note: All data in this Material Data Sheet are only for information purposes. Other dimensions and features to customer specification on request. Guarantees relating to specific characteristics or purposes require always a special written agreement.