

Technical datasheet

Nickel Foil

Nickel foil produced by the electrodeposition process with very high chemical purity and an excellent and consistent surface finish.

Available dimensions

Thickness	9 – 150 microns	Available as cut pieces or in coil
Width	Up to 1000 mm	

Chemical composition (%)

Ni	C	Cr	Co	Cu	Fe	S	Zn
99.97min	0.005max	0.005max	0.005max	0.005max	0.005max	0.002max	0.001max

Physical properties

Density	8.9 g/cm ³	Thermal conductivity	70 W/m•K
Melting range	1432-1446 °C	Expansion coefficient (20-100°C)	13.3 µm/m•C
Electrical resistivity 20°C,	8.0 µΩ.cm	Magnetic permeability – initial	110 H/m
		– maximum	600 H/m

Mechanical properties – typical room temperature properties

Foil thickness (microns)	9	20	50
<u>Condition of supply</u>		<u>As electrodeposited</u>	
Tensile strength (MPa)	790	720	640
Elongation (%)	0.5	1	6
<u>Condition of supply</u>		<u>Fully annealed</u>	
Tensile strength (MPa)	300	290	320
Elongation (%)	5	9	20

Surface finish – typical values

Standard finish	0.10 - 0.40 µm Ra
Mirror finish	0.01 - 0.01 µm Ra

Key attributes

The electrodeposition process results in material with very high chemical purity, excellent surface finish and a highly uniform and consistent product. Electrodeposition allows material to be produced in lower thicknesses and wider widths than can be achieved by conventional rolling.

Nickel foil has the same excellent corrosion resistance as conventional wrought nickel in a wide range of environments and applications. Specific to battery applications for use as the current collector Ni is stable and corrosion resistant to higher voltages than copper and aluminium and the very high purity offers benefits in high drain applications such as power tools and electric vehicles.

Applications

Electrical, electronic applications
Battery applications, current collector
Burst discs
Gaskets

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