

# NICKEL 270 STRIP

UNS N02270

**AMETEK®**

SPECIALTY METAL PRODUCTS

**WALLINGFORD**

## TECHNICAL DATASHEET

### DESCRIPTION

Nickel 270 (899A) is our purest nickel strip material, offering superior conductivity compared to cast products. Nickel 270 offers the most flexibility in design for cost savings, weight reduction, and increased power in battery systems.

Produced using a wrought powder metallurgy process, nickel 270 delivers excellent mechanical properties, that offer major advantages for battery pack manufacturers.



### HIGH ELECTRICAL CONDUCTIVITY

High purity nickel strip 270 is used in battery applications due to its excellent electrical conductivity, corrosion resistance, and mechanical strength. With a nickel purity of 99.98%, nickel 270 has high thermal coefficient of electrical resistance makes it suitable for battery connectors in range of industries.

Its superior ductility allows for easy fabrication into various shapes and sizes, enhancing the efficiency of battery assembly. Additionally, the nickel strip's resistance to oxidation and degradation ensures longevity and stability, contributing to the overall performance and safety of battery systems.

### NICKEL 270 APPLICATIONS

Nickel 270 strip offers unique properties that make it advantageous for various applications:

**Battery Connectors:** Nickel 270 is used in the production of battery connectors and tabs enabling the connection of multiple NiMH, NiCd, or Li-Ion batteries into battery packs. These packs power rechargeable devices, such as computers, smart devices, cardiac pacemakers, power tools, electric vehicles, and aerospace batteries. Other battery applications include cathodes and switchgear connections.

**Electronic Components:** Nickel 270 strip is used in electronic applications such as lead wires, anodes, and other connectors, due to its ability to maintain electrical properties across a wide temperature range.

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### NICKEL 270 CHEMISTRY

Nickel	99.9%
Manganese	0.01%
Iron	0.01%
Carbon	0.01%

### NICKEL 270 MECHANICAL PROPERTIES

	ANNEALED	COLD ROLLED
Ultimate Tensile Strength	55,000 PSI	105,000 PSI
Yield Strength (0.2% Offset)	15,000 PSI	100,000 PSI
Elongation in 2" *	40%	2%
Modulus of Elasticity (Tension)	30.1 X 10 <sup>6</sup> PSI	-

\*The measured elongation will be less as thickness decreases to 0.002" and less.  
These values may be adjusted by control of process variables – Contact us for desired values.

### NICKEL 270 MECHANICAL PROPERTIES

Density	0.322 lbs./cu.in.
Melting Point (Approx.)	1450°C
Electrical Resistivity @ R.T.	7.4 Microhm · cm
Temperature Coefficient of Resistivity (TCR) (0°C to 25°C)	6000 ppm/°C
Thermal Expansion Coefficient (20°C to 100°C)	14.0 X 10 <sup>-6</sup> /°C
Thermal Conductivity @ R.T.	86.3 W/m · K
Curie Temperature	355°C
DC Magnetic Properties Coercivity	3.0 oersteds
DC Magnetic Properties Saturation Induction	6050 Gauss
Magnetic Attraction	Yes
Specific Heat	0.110 gram · cal./°C

Typical values to guide alloy selection but are not a guarantee of minimum or maximum.

**WALLINGFORD** / **AMETEK**  
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