

THE AMETEK ADVANTAGE



**Engineered  
Metal Strip  
Products**

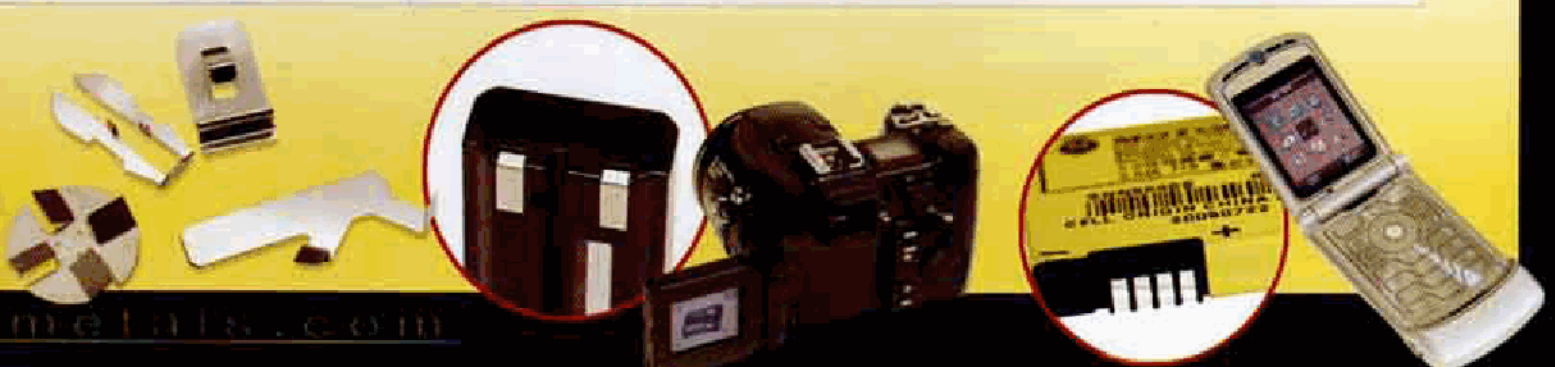
**AMETEK<sup>®</sup>**  
SPECIALTY METAL PRODUCTS

[www.ametekmetals.com](http://www.ametekmetals.com)

## Our standard capabilities:

- Thickness – 0.002" to 0.090" with tolerances of +/- 5%. Special gauges and tolerances available on request.
- Width – Up to 14.00 inches with tolerances of +/-0.003" for under 1" in width and +/-0.005" for over 1" in width. Special tolerances on request.
- Coil Size – Up to 200 lbs. per inch of width with no weld. Standard arbor diameters are 3", 6", 8", 12", and 16" inches. Larger oscillated coils up to 480 lbs. available for material up to 0.065" thick x 0.750" wide.
- Temper Ranges – From annealed to full hard.

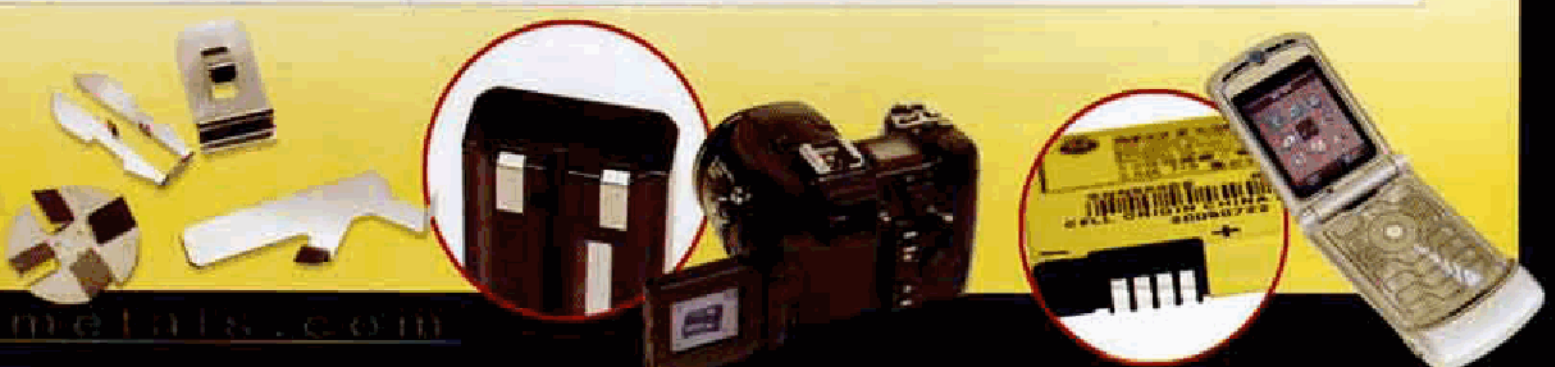
Application	Advantages
Material that can be formed, welded, soldered, and brazed, offering major advantages to the user.	<ul style="list-style-type: none"> <li>    Highest degree of electrical conductivity</li> <li>    Lowest electrical resistivity available in pure nickel strip</li> <li>    Homogeneity, microcleanliness, and close composition control to enhance weldability</li> <li>    Low levels of surface oxides to reduce die wear and provide excellent solderability</li> <li>    Excellent formability</li> </ul>
Used for glass to metal seals in electron tubes, and other applications. Other nickel/iron variations can be used.	<ul style="list-style-type: none"> <li>    Controlled chemistry ensures superior glass sealing characteristics</li> <li>    Thermal expansion and magnetic properties are consistent</li> <li>    Low levels of surface oxides reduce die wear</li> <li>    Low gas content reduces possibility of out gassing over time</li> </ul>
SEALVAR is a high quality alloy used primarily for hybrid packages. SEALVAR is available in high purity, more closely controlled chemistry.	<ul style="list-style-type: none"> <li>    Reproducibly low level of reactive impurity elements</li> <li>    Low carbon: 0.01% maximum; 0.004 nominal</li> <li>    Higher electrical and thermal conductivity</li> <li>    Lower softening point</li> </ul>
Used for high purity applications.	<ul style="list-style-type: none"> <li>    Reduced magnetism</li> <li>    Currently up to 25% tungsten</li> <li>    Other nickel tungsten blends available</li> </ul>
Used for deep draw applications. It also is used for AMETEK 599 is the highest purity cobalt strip used for cobalt 60 gamma radiation sources, and X-ray tube targets.	<ul style="list-style-type: none"> <li>    Excellent ductility and formability</li> <li>    Ductile strip has more than double the elongation value of high-purity cobalt strip</li> </ul>
Used for wire producers in place of smaller pancake coils 0.007" to 0.020" thick by 0.900" wide.	<ul style="list-style-type: none"> <li>    Cost savings from using smaller pancake coils. These continuous strip lengths contain high-strength, fully functional "invisiwelds" developed by cold reduction of the coils after joining.</li> </ul>
Used for beryllium-copper for many electrical applications where high strength and excellent formability without dimensional instability are required. Used for connectors, sockets, and other applications.	<ul style="list-style-type: none"> <li>    High strength and excellent formability without dimensional instability</li> <li>    Highly resistant to shrinkage and warpage – up to 10x more than BeCu</li> <li>    Excellent solderability and resistance to intermetallic formation at high temperature</li> <li>    Excellent corrosion resistance and ease of cleaning</li> <li>    Lower initial cost and processing cost savings</li> <li>    High conductivity (Spinodal 388)</li> </ul>
Used for high hardness applications.	<ul style="list-style-type: none"> <li>    High hardness</li> <li>    Excellent oxidation resistance</li> <li>    Good high-temperature creep resistance</li> <li>    Low density (6gm/cc)</li> </ul>
Used for low carbon applications.	<ul style="list-style-type: none"> <li>    Low carbon (&lt;100ppm)</li> <li>    Very high purity</li> </ul>



## Our standard capabilities:

- Thickness – 0.002" to 0.090" with tolerances of +/- 5%. Special gauges and tolerances available on request.
- Width – Up to 14.00 inches with tolerances of +/-0.003" for under 1" in width and +/-0.005" for over 1" in width. Special tolerances on request.
- Coil Size – Up to 200 lbs. per inch of width with no weld. Standard arbor diameters are 3", 6", 8", 12", and 16" inches. Larger oscillated coils up to 480 lbs. available for material up to 0.065" thick x 0.750" wide.
- Temper Ranges – From annealed to full hard.

Application	Advantages
Material that can be formed, welded, soldered, and brazed, offering major advantages to the user.	<ul style="list-style-type: none"> <li>    Highest degree of electrical conductivity</li> <li>    Lowest electrical resistivity available in pure nickel strip</li> <li>    Homogeneity, microcleanliness, and close composition control to enhance weldability</li> <li>    Low levels of surface oxides to reduce die wear and provide excellent solderability</li> <li>    Excellent formability</li> </ul>
Used for glass to metal seals in electron tubes, and other applications. Other nickel/iron variations can be used.	<ul style="list-style-type: none"> <li>    Controlled chemistry ensures superior glass sealing characteristics</li> <li>    Thermal expansion and magnetic properties are consistent</li> <li>    Low levels of surface oxides reduce die wear</li> <li>    Low gas content reduces possibility of out gassing over time</li> </ul>
SEALVAR strip is a high quality alloy used primarily for hybrid packages. SEALVAR is available in high purity, more closely controlled chemistry.	<ul style="list-style-type: none"> <li>    Reproducibly low level of reactive impurity elements</li> <li>    Low carbon: 0.01% maximum; 0.004 nominal</li> <li>    Higher electrical and thermal conductivity</li> <li>    Lower softening point</li> </ul>
Used for high purity applications.	<ul style="list-style-type: none"> <li>    Reduced magnetism</li> <li>    Currently up to 25% tungsten</li> <li>    Other nickel tungsten blends available</li> </ul>
Used for deep draw applications. It also is used for AMETEK 599 is the highest purity cobalt strip used for cobalt 60 gamma radiation sources, and X-ray tube targets.	<ul style="list-style-type: none"> <li>    Excellent ductility and formability</li> <li>    Ductile strip has more than double the elongation value of high-purity cobalt strip</li> </ul>
Used for wire producers in place of smaller pancake coils 0.007" to 0.020" thick by 0.900" wide.	<ul style="list-style-type: none"> <li>    Cost savings from using smaller pancake coils. These continuous strip lengths contain high-strength, fully functional "invisiwelds" developed by cold reduction of the coils after joining.</li> </ul>
Used for beryllium-copper for many electrical applications where high strength and excellent formability are required. Used for connectors, sockets, and other applications.	<ul style="list-style-type: none"> <li>    High strength and excellent formability without dimensional instability</li> <li>    Highly resistant to shrinkage and warpage – up to 10x more than BeCu</li> <li>    Excellent solderability and resistance to intermetallic formation at high temperature</li> <li>    Excellent corrosion resistance and ease of cleaning</li> <li>    Lower initial cost and processing cost savings</li> <li>    High conductivity (Spinodal 388)</li> </ul>
Used for high hardness applications.	<ul style="list-style-type: none"> <li>    High hardness</li> <li>    Excellent oxidation resistance</li> <li>    Good high-temperature creep resistance</li> <li>    Low density (6gm/cc)</li> </ul>
Used for high purity applications.	<ul style="list-style-type: none"> <li>    Low carbon (&lt;100ppm)</li> <li>    Very high purity</li> </ul>



### AMETEK Metal Strip Products

*Located in Wallingford, CT, AMETEK Specialty Metal Products (SMP) is a leading producer of highly engineered metal strip products using state-of-the-art powder metallurgy and metallurgy consolidation technology.*

*AMETEK SMP is a pioneer in the development of metal strip products with more than 40 years of experience and numerous patents in wrought powder metallurgy. AMETEK's proprietary alloying techniques produce metal strip with enhanced mechanical and metallurgical properties.*

*AMETEK SMP also specializes in shaped wire, fully dense components, thermal management products, metal matrix components, metal powders, and metal clad products.*

*AMETEK SMP is a unit of AMETEK, Inc., a leading global manufacturer of electronic instruments and electric motors with annualized sales of nearly \$1.8 billion.*

*For more information, visit our Web site at [www.ametekmetals.com](http://www.ametekmetals.com)*



#### SPECIALTY METAL PRODUCTS

21 TOELLES ROAD, WALLINGFORD, CT 06492 U.S.A.  
Telephone: (203) 949-8890 • Fax: (203) 949-8876



Asia: 10 Ang Mo Kio, Street 65, #05-12 Techpoint, Singapore 569059  
Telephone: 65-64842388 • Fax: 65-64816588