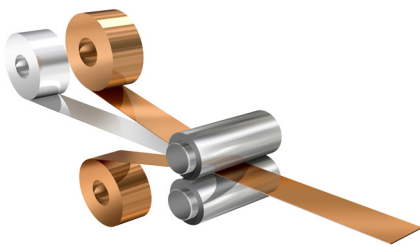


### Button Cell Batteries: Cu/S304/Ni

Tri-clad battery material is a preferred choice for the anode current collector lid for button cell batteries due to its optimum combination of cosmetics, strength, corrosion resistance, and reduced contact resistance. A thicker than plated nickel clad exterior provides reduced contact resistance and a more finished appearance. Strength can be altered by selecting particular thicknesses of various materials. The use of different materials inside and outside lets the designer achieve resistance to deleterious electrochemical reactions inside the battery chemistry. The EMS process results in a favorable crystallographic texture for excellent deep draw formability. The superior strength and formability of clad metals enables designers to achieve ever-thinner containments. Common applications include batteries for portable electronic devices, such as remotes, toys, watches, calculators, and hearing aids.



#### Product Description - Key Attributes

**EMS Material Designation**

Cu / SS / Ni

**Composition**

C10100 / S30400 / N02201

**Ratios**

16 / 76 / 8 by thickness

#### Chemical Composition

**UNS**

**Grade Eur**

**Chemistry(%)**

C10100

Cu - OF

99.99 Cu min

S30400

EN 1.4301

0.05 C, 18 Cr, 9 Ni, 1.6 Mn, 0.5 Si, Bal Fe

N02201

EN 2.4068

99.00 Ni min

#### Physical Properties

**ENGLISH**

**METRIC**

Density

0.295 lb / cu in

8.17 g/cm<sup>3</sup>

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Mechanical Properties	ENGLISH	METRIC
Yield Strength 0.2% offset	30 - 50 KSI	207 - 345 MPa
Tensile Strength	80 - 105 KSI	552 - 724 MPa
Elongation 2" gage length	40 %	40 %

Other Properties	Copper Surface	Matte Nickel Surface
Typical Surface Roughness	3-8 0.076-0.203 10-15	0.254-0.381

Availability	
<b>Gauge</b>	0.0039 - 0.013" (0.1 - 0.33 mm)
<b>Width</b>	Widths up to 12", (305mm) available
<b>Tolerances</b>	Commercial tolerances apply
<b>Ratio</b>	Others available upon request
<b>Surface</b>	Uniform, non reflective Matte finish. Smooth bright finish.
<b>Temper</b>	O temper (Annealed). Other tempers available upon request
<b>Form</b>	Coil