



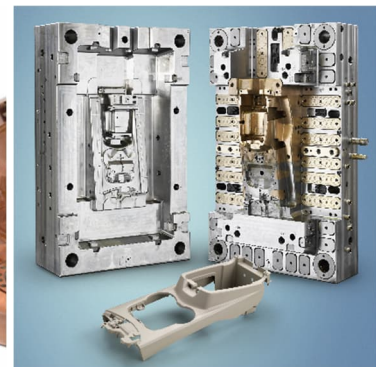
## Technical Data Sheet

# AMPCOLOY® 89

AMPCOLOY® 89 is a remarkable bronze alloy that has been designed with slightly higher electrical and heat transfer properties than AMPCOLOY® 95. Its unique composition results in superior thermal conductivity, high tensile strength and exceptional wear and corrosion resistance, making this alloy the ideal choice for applications requiring durability and efficient heat transfer.

### Key Features:

- ▶ Improved electrical & heat transfer
- ▶ High mechanical properties
- ▶ Corrosion & wear resistant
- ▶ High thermal & electrical conductivity
- ▶ Good machinability & coatability
- ▶ RWMA Class 3
- ▶ Remarkable properties up to 842°F
- ▶ Forged or extruded to achieve best physical properties
- ▶ Increasing conductivity at higher temperatures

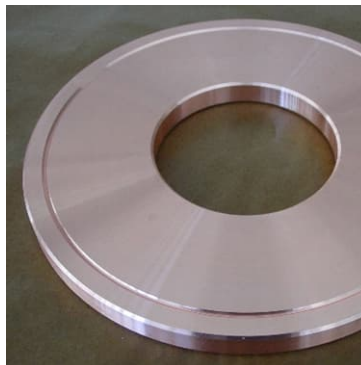


### Nominal Composition:

Copper (Cu)	Nickel (Ni)	Beryllium (Be)	Cobalt (Co)	Others
Balance	1.8%	0.4%	max. 0.3%	max. 0.4%

### Applications:

- ▶ Used where both high mechanical strength & conductivity are essential
- ▶ For injection molding, die casting & welding industries
- ▶ Flash welding tools, welding wheels & mesh welding electrodes
- ▶ Cooling plates & inserts for the plastic molding industry
- ▶ Plunger tips for aluminum die casting
- ▶ Damper ring segments in generators



AMPCOLOY® 89 has a wide range of applications in various industries. Its exceptional electrical and heat transfer properties make it a preferred choice for welding electrodes. It also excels in aluminum die casting machines and as a component in molds for plastic injection molding. Whether producing precision components or enhancing the performance of welding equipment, the alloy's unique properties prove invaluable in a range of demanding applications.



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Mechanical Properties (Nominal values)	Forged / Extruded
Tensile Strength R <sub>m</sub> (ksi)	107
Yield Strength R <sub>p0.5</sub> (ksi)	98
Elongation 2" (%)	12
Brinell Hardness (10/3000)	230
Rockwell Hardness (HRB)	98
Modulus of Elasticity E (ksi)	19500

### Physical Properties:

Density ρ (lbs/in <sup>3</sup> )	Coefficient of Expansion α (in/in/°F)	Thermal Conductivity λ (W/m·K)			Electrical Conductivity (% I.A.C.S.)	Specific Heat C <sub>p</sub> (BTU/lb·°F)
0.32	9.55·10 <sup>-6</sup>	68°F 300	212°F 320	392°F 340	69	0.091

### Machining Parameters:

Operation	Cutting Speed v <sub>c</sub> (m/min)	Feed f (mm/rev)	Depth a (mm)	Tool Specification
Milling – Roughing	110 - 160	0.1 - 0.4	up to 4	K10 - K20
Milling – Finishing	90 - 115	0.05 - 0.1	0.1 - 0.5	K10 - K20
Turning – Roughing	150 - 225	0.1 - 0.2	up to 2	K10 - K20
Turning – Finishing	170 - 250	0.05 - 0.1	0.1 - 0.2	K10 - K20

Scan the QR Code to view our machining recommendations:



### Health & Safety:

Since the alloy contains Beryllium, it is recommended that during any operation which is liable to create dust or fumes (for example dry grinding, polishing or welding) precautions should be taken to ensure there is no inhalation or exposure to eyes or skin. Conventional machining (for example milling and turning) is not generally considered hazardous.

Contact us

