



# Technical Data Sheet

## AMPCOLOY® 944

AMPCOLOY® 944 is designed to provide excellent thermal conductivity, high tensile strength, and hardness while eliminating the need for beryllium. This high copper alloy provides the essential properties required for demanding industrial tasks, making it a reliable and safe choice for applications that require both high mechanical performance and compliance with health and safety regulations.

### Key Features:

- ▶ High tensile strength & hardness
- ▶ Good thermal & electrical conductivity
- ▶ Beryllium-free
- ▶ Safe alternative to Beryllium Copper
- ▶ Food certified by ISEGA
- ▶ Corrosion & wear resistant
- ▶ RWMA Class 4
- ▶ Increasing conductivity at higher temperatures



### Nominal Composition:

Copper (Cu)	Nickel (Ni)	Silicon (Si)	Chromium (Cr)	Others
Balance	7.0%	2.0%	1.0%	max. 0.5%

### Applications:

- ▶ Safe alternative to Beryllium Copper
- ▶ Used to comply with strict health and safety regulations
- ▶ Injection molding, thermoforming & blow molding
- ▶ Electrode holders, spot-welding electrodes & seam welding discs
- ▶ Projection & butt-welding dies
- ▶ Plunger tips for cold-chamber aluminum high-pressure die casting
- ▶ Molds for low-pressure die casting



AMPCOLOY® 944 has a wide range of applications in various industries where a combination of excellent electrical and thermal conductivity, high mechanical properties, and safety compliance is essential. This versatile alloy is used for plastic molding, resistance welding and die casting as well as in general engineering, automotive, metal processing, oil, gas & chemical industries.



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Mechanical Properties (Nominal values)	Forged	Extruded
Tensile Strength $R_m$ (ksi)	115	136
Yield Strength $R_{p0.5}$ (ksi)	95	106
Elongation 2" (%)	4	5
Brinell Hardness (10/3000)	270	294
Rockwell Hardness (HRC)	28	31
Compressive Yield Strength $R_{pc0.1}$ (ksi)	102	103
Charpy $a_k$ (ft·lbs)	6	5
Modulus of Elasticity E (ksi)	19600	21900

## Physical Properties:

Density $\rho$ (lbs/in <sup>3</sup> )	Coefficient of Expansion $\alpha$ (in/in/°F)	Thermal Conductivity $\lambda$ (W/m·K)			Electrical Conductivity (% I.A.C.S.)	Specific Heat $c_p$ (BTU/lb·°F)
0.314	$9.72 \cdot 10^{-6}$	68°F 156	212°F 170	392°F 190	30	0.091

## Machining Parameters:

Operation	Cutting Speed $v_c$ (m/min)	Feed $f$ (mm/rev)	Depth $a$ (mm)	Tool Specification
Milling – Roughing	160 - 240	0.1 - 0.2	up to 2	K10 - K20
Milling – Finishing	180 - 250	0.05 - 0.1	0.1 - 0.2	K10 - K20
Turning – Roughing	160 - 240	0.1 - 0.2	up to 2	K10 - K20
Turning – Finishing	180 - 250	0.05 - 0.1	0.1 - 0.2	K10 - K20

Scan the QR Code to view our machining recommendations:



Contact us

