High-Purity Cobalt Strip—AMETEK 599 Alloy

APPLICATIONS

- *Cobalt 60 Gamma Radiation Sources*
- *Anodes for Electroplating*
- *High-temperature Magnetic Applications*
- *Catalytic Applications*
- *X-Ray Tube Targets*

DESCRIPTION

H-P Cobalt strip has even higher purity than the powder from which it is formed. It is the highest purity cobalt strip produced in the United States.

COMPOSITION—Typical Analysis

Cobalt (Co)	99.6% minimum
Nickel (Ni)	.25% maximum
Copper (Cu)	.015% maximum
Iron (Fe)	.070% maximum

STANDARD SIZES AVAILABLE

Thickness	0.002 to 0.050 inches
Width	Up to 10 inches

CONDITION

HP-Cobalt is normally furnished in the annealed condition but can be furnished, on request, with various degrees of cold reduction to a maximum of 25%.

Cobalt as annealed consists of a mixture of the stable room temperature HCP structure and the high-temperature FCC phase. Upon cold working, the FCC phase transforms to the more brittle HCP, and a completely brittle state is achieved over 25% cold reduction.

Cobalt transforms on heating from the hexagonal (HCP) crystal structure to the face centered cubic (FCC) at 785°F (417°C).

PROPERTIES OF ANNEALED COBALT STRIP—Typical

Ultimate Tensile Strength	110,000 psi
Elongation in 2 inches	22%
Hardness	193 DPH

STANDARD TOLERANCES

Thickness		±5%
Width	**Under 1 inch**	±0.003 inch
	Over 1 inch	±0.005 inch

Special tolerances on request.

COIL SIZES

Up to 150 pounds per inch of width with no weld depending on order quantity.
Standard arbor diameters: 6 inch, 12 inch, and 16 inch.

PHYSICAL CONSTANTS OF COBALT

Density	8.85 gm/cc
Atomic No.	27
Atomic Weight	58.94
Melting Point	2723°F (1495°C)
Coefficient of Linear Thermal Expansion Near 68°F (20°C)	7.66 microinches per inch per °F (13.8 microinches per inch per °C)
Electrical Resistivity	6.24 microhm/cm
Electrical Conductivity	27.6% IACS
Modulus of Elasticity in Tension	30 x 10 psi

EFFECTIVE: 4/01 **SUPERSEDES: 6/99**

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