

Alkaline,
Cyanide-free
Bright Copper

CUPROSTAR® NC

CUPROSTAR® NC alkaline, cyanide-free bright copper process is a cost-effective and environmentally sound alternative to traditional cyanide-containing processes. The bright copper is engineered for use on all commonly used base materials. The process exhibits exceptional throwing power on complex part geometries ensuring that complete, consistent and uniform coverage is achieved.

Specifically, the CUPROSTAR NC process provides high yields and significantly reduced rejects when plated on aluminum, brass, steel and zinc die cast parts. The complete process reduces regulatory burden and exposure to government restrictions.

CUPROSTAR NC process offers a robust operating window that plates uniform, fine-grained, ductile and adherent deposits. The patented process does not require a specialized pretreatment cycle and uses virtually the same process sequence as a cyanide-based system. CUPROSTAR NC is an extremely versatile and easy-to use process. By making simple adjustments to the temperature, pH and copper content, the process can be quickly modified to meet specific brightness, current density, adhesion and throwing power application requirements.

CUPROSTAR NC is the only cyanide-free process that is being successfully used in a wide range of industries, markets and applications.

PROCESS FLOW

Metal Substrate

Soak Clean

Electro Clean

Activation

CUPROSTAR® NC

ENTHONE®
Cu-Ni-Cr

Brass, steel, and zinc die cast process flow. Aluminum process flow available upon request.








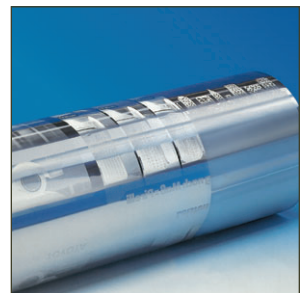
enthone®

CYANIDE
FREE

CUPROSTAR® NC Creates Value.

CUPROSTAR NC is an extremely versatile and easy-to use alkaline copper process. Production-proven, the process provides high yields and low rejects rates on all commonly used base materials.

ATTRIBUTE		CUPROSTAR® NC ADVANTAGE
	Cyanide-Free	<ul style="list-style-type: none"> • Environmentally sound, sustainable alternative • Reduced government restrictions • Simple storage • Improved worker safety
	Design Versatility	<ul style="list-style-type: none"> • Used on all commonly used substrates • Potential to use lower cost substrates • Exceptional adhesion; good quench test results • High yields; reduced rejects
	Excellent Throwing Power	<ul style="list-style-type: none"> • Delivers better, more consistent metal distribution versus traditional cyanide-based systems • High yields achieved with complex part geometries (including sharp edges)
	Simplified Waste Treatment	<ul style="list-style-type: none"> • Enables simple and effective waste treatment at a reduced cost (no need to treat cyanide; free of pollutants) • Eliminates chlorine bleaching and the associated risk of chlorine gas accidents • No potential for hydrogen cyanide creation with this cyanide-free process
	Ease of Operation	<ul style="list-style-type: none"> • Ideally suited for both rack and barrel applications • Same copper anode quality as acid copper • Fully customizable operating conditions to fit customer application • Modification of temperature, pH and copper content enables further optimization of: <ul style="list-style-type: none"> — Throwing power — Brightness — Current Density — Adhesion



Performance Parameters

Temperature	35°C (90°F)
pH	10.3
Current Density	Barrel: 0.5 A/dm ² Rack: 0.8 A/dm ²
Anodic Current Density	1.5 A/dm ² maximum
Plating Speed	0.16 µm/min at 1 A/dm ²
Current Efficiency	80 - 90%

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