

Long Life,
Cadmium and
Lead-free,
Electroless
Nickel Process

ENfinity® 9LF

ENfinity® 9LF is a patented long life, cadmium and lead-free, bright electroless nickel process designed to produce consistent deposit properties and solution operating conditions over an extended operating life. Deposits of ENfinity 9LF will maintain internal compressive stress (-5N/mm^2 to -20N/mm^2) beyond 16 metal turnovers (MTOs). The process produces deposits within a phosphorus content range of 7.5 to 10%. The coating deposit is homogenous in structure with uniform phosphorus distribution. The uniform distribution of phosphorus in the deposit promotes good ductility, high elongation properties and excellent corrosion performance.

ENfinity 9LF delivers consistent performance and stability. Down time is significantly reduced and productivity greatly increased as frequent solution make-ups and tank stripping are eliminated. Overall production cost is reduced by less solution make-up and waste disposal cost. Individual potential savings can be identified with the Enthone Cost of Ownership Model, provided by your local Enthone sales representative.

ENfinity 9LF is sulfate-free, pH self-regulating, and can be operated with or without ammonia, with no sacrifice in performance. Low volume additives allow for high bath loading. ENfinity 9LF may be used for a wide range of applications, and is ideally suited to plate aluminium due to its high tolerance to zinc impurity. Registered in the automotive IMDS system, the process offers a steady state option for endless and consistent operation. ELV, RoHS and WEEE compliant, ENfinity 9LF offers the lowest cost of ownership of any other mid phosphorus EN available today.



ENfinity® 9LF is ideally suited to plate aluminium due to its high tolerance to zinc impurity.

ENfinity® 9LF

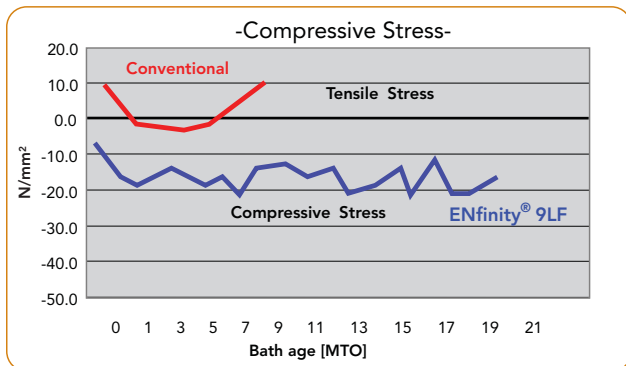


ENfinity® 9LF delivers high productivity and is ideally suited for high bath loading conditions. Small parts barrel plated with ENfinity 9LF demonstrate consistent, uniform distribution.



Computer printer shafts plated with ENfinity® 9LF mid phosphorus process exhibit exceptional brightness.

Superior Deposit Characteristics



Stress values below zero represent the desired compressive stress in electroless nickel. Only compressively stressed deposits will result in good corrosion resistance. Tensile stress in the deposit will lead to cracks when parts are physically stressed in operation. ENfinity® 9LF begins with compressive stress and maintains it beyond 16 MTO.

Plating on Aluminum: High Tolerance to Zinc Impurities

-Typical Values for Automotive Mass Production-		
Substrate	ENfinity 9LF Maximum Concentration Zn [mg/l]	Conventional EN Maximum Concentration Zn [mg/l]
Pure Aluminum (99.9%)	150	50
Aluminum Cast (GD-AISI12)	500	150

When plating on aluminum, conventional EN processes exhibit extremely limited tolerance to zinc impurities. ENfinity® 9LF provides a high zinc tolerance, that makes the process a commercially attractive alternative for electroless nickel plating on aluminum substrates.

enthonne

AMERICAS Enthone Inc. • 350 Frontage Road, West Haven, CT 06516 • Tel: 203-934-8611 • Fax: 203-799-1513

ASIA Cookson Electronics Ltd. - Enthone • 1/F, Block A, 21 Tung Yuen Street, Yau Tong Bay, Kowloon, Hong Kong • Tel: 852-2499-7299 • Fax: 852-2415-2225

EUROPE Enthone GmbH • Elisabeth-Selbert-Straße 4, 40764 Langenfeld, Germany • Tel: 49-2173-8490-0 • Fax: 49-2173-8490-200

