

Electroless Nickel Technology Formulated Without Lead & Cadmium: An Overview of the Performance Characteristics

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Lead and cadmium have been used extensively as micro-additives in the formulation of electroless nickel technology. It is well know that lead is a strong catalytic poison that inhibits the homogeneous reaction that leads to spontaneous decomposition of the working bath. Cadmium, as well, has significant leveling and brightening effects, which can enhance the performance of the resulting EN-P film. The formulation advantage of using these additives is significant, however, the co-deposition of lead and cadmium, coupled with an increasing regulatory awareness, will limit the use of EN coatings for a variety of industries and applications in the near future. The formulation of EN technology without the use of these toxic additives will be discussed. Performance characteristics of the deposits, such as corrosion and wear resistance, and the operating characteristics of the working bath will be reviewed.

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