



## Dav-Tech ELECTROLESS NICKEL

*Fact: Dav-Tech's proprietary Electroless Nickel process\* guarantees the superior performance characteristics and quality that our customers have come to expect.*

### Welcome to Electroless Nickel Plating.

The term electroless nickel plating refers to that process whereby a dense coating of nickel-phosphorus alloy is uniformly deposited on a metallic substrate without the use of electricity. The primary advantage of this process is its perfect "throwing" power.

Unlike electrolytically deposited coatings, deposits can be made on any surface to which the solution has free access. In addition, the electroless coating is extremely uniform and will not generate excessive buildup on corners or projections.

Typical thickness of electroless nickel plating can be as thin as .00005" to upwards of .010". Tolerancing is dependent upon selected plating thickness. **Mechanical properties** such as **hardness** and **resistance to wear** can be improved by utilizing a predetermined low temperature heat treatment.

When the substrate material is sensitive to heat treatment, modifications can be made which only affect the coating. In the **as-plated condition**, electroless nickel will convey a hardness reading of Rc48. In the **post-heat treat** condition the hardness will increase to Rc70. This capability of modifying the hardness characteristic enables **Dav-Tech** to furnish an application-specific coating.

### All Electroless Nickel platings are not the same.

Since its initial discovery in the late 1940's, electroless nickel plating has expanded in the scope of its application to include every major industry in the world today.

There are many brands of electroless nickel plating baths, each with its own characteristics. **Dav-Lin**<sup>®</sup> Nickel is a proprietary formulation used solely by **Dav-Tech** Plating. **Dav-Lin**<sup>®</sup> nickel was developed to provide the plastics, medical, nuclear, and defense industries with a high quality, Lead-free and Cadmium-free electroless nickel coating. **Dav-**

**Lin**<sup>®</sup> nickel satisfies the "End of Life Vehicle Directive" (ELV), the European Union's Reduction of Hazardous Substances (RoHS), as well as the Waste from Electrical and Electronic Equipment (WEEE) directives.

It is strictly a functional coating offering high corrosion resistance and improved wear resistance. In some applications **Dav-Lin**<sup>®</sup> Electroless Nickel can be used as a decorative finish, thereby allowing the use of a single coating where multiple coatings were previously specified.

### Benefits of Electroless Nickel Plating

- Superior corrosion resistance
- Natural lubricity, providing excellent mold release properties
- Freedom from porosity
- Anti-galling characteristics for mating metallic substrates
- A solderable, hard coating for light metals
- Overall uniformity for salvaging worn or mismachined parts
- Unless otherwise requested, all plating is furnished in accordance with MIL-C-26074

### **Dav-Lin**<sup>®</sup> Electroless Nickel outlasts the competition 5 to 1.

Due to standardization of formulation and stringent process controls, **Dav-Lin**<sup>®</sup> Electroless Nickel has demonstrated performance far superior to other commercial electroless nickel coatings. In some cases **Dav-Lin**<sup>®</sup> Nickel has been found to outlast other electroless nickel coating **five times longer** in corrosive environments. Its superior wear resistance is clearly demonstrated when, in the as-plated condition, it has a Taber Wear Factor of 2.13 compared to that of hard chrome (2.0)

*\*Dav-Lin Electroless Nickel is a proprietary formulation and plating process designed for high-performance applications. It is the only nickel coating offered by Dav-Tech Plating.*

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