

REPLACING CADMIUM...ALTERNATIVE PLATING TAKING (THE) CHARGE

As company and industry-wide restrictions plus government bans take effect, one chemical firm has come to the forefront of research and development of a cost efficient, quality efficient cadmium plating substitute.

During World War II, with most of the cadmium and cadmium plating going towards the war effort, the plating industry investigated alternatives—most notably, tin zinc compounds—that would provide suitable finishes and corrosion protection. By the end of war, little had been accomplished in this search, and with the return of a plentiful supply of cadmium, it was once again the coating of choice, providing an excellent balance of rust prevention, cost effectiveness and finish appearance.

Now, cadmium is in a war of its own and under siege, being given the label as a toxic and hazardous material, and being categorized as a possible carcinogen. With handling costs, disposal costs, and the costs of implementing environmental protective measures continuously going up, as well as worker health concerns, entire industries, such as the automotive sector, have banned cadmium plating while others have put in place severe restrictions and limits on its use. Faced with decreasing demand for cadmium, yet with few alternatives available, plating services both large and small are once again searching for the balanced solution.

Unlike 60 years ago, however, the chemical companies supporting the plating industry have taken the issue to heart, and one in particular, Aldoa (Detroit, MI) has been a pioneer in the development of alternative materials...and alternative processes. With its close ties to Detroit and the Midwest area plating firms, where the bulk of the work is auto related, Aldoa was one of the first chemical firms to offer a viable alternative to cadmium plating as the automakers steered away from its use. Aldoa's acid zinc-nickel process, Novalyte ZNA, is one of the most widely used substitutes for cadmium plating. With more than five years of experience providing Novalyte ZNA, Aldoa has fine tuned both the product and process.

That, according to Rick Keith, President of Wolverine Plating, Roseville, MI, was a major factor in his selection of Novalyte ZNA. "We were the first plating company to use their new product," says Mr. Keith, "but right from the start it was apparent that they had done their homework. They (Aldoa) demonstrated a level of expertise and knowledge, about the product, and about the process that no other company could. We compared four other suppliers' products...we found Novalyte ZNA was the best product as to uniformity, coverage and control of finish and thickness. And, because of Aldoa's extensive development program, our transition from cadmium to the zinc nickel alloy was not a trial and error process. It went smoothly, with no compromise in our quality."

Novalyte ZNA is a two-part plating system for barrel or rack plating applications that deposits a mirror-bright zinc/nickel (10%-20% nickel) finish. Formulated to exacting chemical specifications, and combined with Aldoa's extensive process development, in-depth application analysis, and proprietary additives, Novalyte ZNA assures uniform, thickness, finish, and corrosion protection. When combined with the appropriate Aldoa chromate, it withstands more than 2000 hours of grueling, red rust salt spray tests.

Aldoa's Novalyte AZN is an alkaline non-cyanide zinc-nickel alloy plating process that deposits a 8%-14% nickel content in the finish, establishing a greater level of corrosion protection than any other commercially available process which typically give 4%-7% nickel content. Novalyte AZN is also a bright finish and readily accepts different types of post treatment.

