ENHANCED DYE ADSORPTION FROM NEW TRIVALENT CHROMIUM COATING

The Aldoa Company (Detroit, MI), a leading research, developer and manufacturer of advanced, environmental-friendly chemicals for the plating industry, has announced the introduction of a new, clear passivation coating for parts having electroplated zinc deposits.
Designated Aldokote TCL, the formulation is a two-part system, based on the trivalent chromium salts (replacing hazardous hexavalent-based compounds) which gives a clear chromate with excellent adsorption performance for organic dyes of various colors. Further, Aldokote TCL is used at room temperature, so the working solution and parameters are easy to maintain. The bath is suitable for both rack and barrel applications.

Importantly, the new passivation coating can provide 72-96 hours white corrosion protection in neutral salt spray tests; enhanced protection can be achieved with an appropriate sealant.

A working solution of Aldokote TCL is prepared by mixing 2-1/2 parts each of Aldokote TCL-1 and TCL-2 with 95 parts of water. Once properly blended, simple maintenance of operating parameters provides consistent, optimum results. These parameters include trivalent chromium concentration held to 0.10 –0.15 oz./gal., a pH level kept between 1.5 – 2.5, a temperature range of 70 to 85o F, an immersion time of 20 – 40 seconds, and mild agitation through either mechanical or solution recirculation methods. Holding tanks plus other mixing or heating equipment used should be constructed of materials inert to chloride, nitrate or sulfate ions which may be present in the working solution.

When proper parameters are followed, the Aldokote TCL process produces a coating that, by itself, is not of a high luster, yet creates an exceptionally effective base for dye adsorption. For example, Aldoa's AC Yellow Dye #1640-L, used subsequent to Aldokote TCL coating produces a stable yellow color similar in appearance to a comparable hexavalent based conversion coating. Also, the trivalent coating is of sufficient hardness to show very little evidence of scratching, even in the barrel process.

Since 1957, Aldoa has been providing chemical products, research and support to plating and coating industries worldwide. Today, its products cover a wide range of finishing processes including cadmium, copper and copper alloy, nickel, zinc and zinc alloy plating and chromium additives; phosphate coatings; metal cleaning; numerous aluminum treatments; chromate conversion coatings; and solutions for wastewater treatment.

Further information can be found at www.aldoaco.com.