



3 Keys to Better Surface Preparation

Analysis Observation - Maintenance

Based on their make-up and operating requirements, metal finishing processes are subject to depletion of chemical constituents. Cleaners react with surface oils and grease, either by displacement or emulsification. Acids remove oxides, scales, and rust. Plating baths promote the deposition of preferred metals and alloys. Post-finishes apply protective topcoats, such as chromates, oils or lacquers. These are examples of processes that, to varying extents, are depleted upon use, either by immersion or electrolytically.

Many other baths and processes are similarly affected when in use. Appropriate replenishment is the critical factor in maintaining the desired operation of any process bath, be it surface activation, finishing, or post-finishing. This is typically achieved by adding specified quantities of bath components. The processes described require regular reconstitution of specific salts, additives, or product concentrates that are depleted via reaction, deposition, and drag-out. Thus, reinforced, the bath or process will perform as desired, adhering to the prescribed operating parameters.

1. Analysis

- a. Proprietary surface preparation baths and generic blends (cleaners and acids) are normally controlled by a titration analysis. The alkalinity or acidity is converted to the concentration of the proprietary product or additive. Maintenance additions are based on the requirement to re-establish the initial make-up or bath charge. This can occur by adding a product concentrate or specific additive (e.g., caustic or acid). Since routine analysis can confirm a consistent consumption pattern, additions can be made on a specified basis, such as by working shifts.





