

Custom Multi-Metal Cleaner for E-Coat Line



CLIENT PROFILES

A world leader in coating technologies with more than 20 plants around the world. A large Central Ohio coating facility with eight different coating lines that include E-coat, powder coat, and wet paint. The plant has a nine-stage E-coat line that runs a variety of parts for a variety of industries, ranging from automotive to appliance, agricultural and general manufacturing. Pretreatment consists of two cleaning stages: a low pressure alkaline spray system followed by an alkaline immersion bath. Parts are then rinsed and Zinc Phosphated before being processed through the E-Coat System.

OPERATIONAL CHALLENGE

New metal substrates are being integrated into the design of many end products. Metals such as aluminum are being used to reduce weight in vehicles while maintaining structural integrity. Galvanizing is also becoming more common to improve overall quality and improve corrosion resistance.

Conventional alkaline cleaners, when run at concentrations necessary to clean the part, often attack the base aluminum or galvanized surface, resulting in surface defects in the paint.

The plant challenged Kroff Process Technologies to develop a multi-metal cleaner that is safe on all substrates and improve detergent package so the cleaner can effectively remove the toughest drawing and stamping lubes.

CHEMICAL SOLUTION

Kroff designed a moderately alkaline cleaner with a robust detergency package that features a balance of surfactants and solvency that can be run at elevated concentrations without affecting, aluminum,

- HDG, galv anneal, or other soft metals. Both cleaning and alloy tolerance studies were performed in a laboratory setting to fine tune the cleaner package prior to introducing it to the plant.

BOTTOM-LINE RESULTS

- Cleaning and paint quality have dramatically improved. Reject rates on some previously problematic parts have dropped by more than 90%. Bath life in both cleaning stages has more than tripled, reducing chemical costs as well as maintenance, manpower, chemical and waste hauling costs associated with dumping and recharging baths.



Many of the coating lines were originally designed to coat one substrate - often times cast or cold rolled steel. These coating lines are now being tasked with coating multiple metals, sometimes side by side on the same rack.



Kroff Process Technologies enables plant managers and engineers to place the responsibility of cleaning and pre-treating parts on skilled process experts for professional management. Our unique blend of onsite Chemists, coupled with an infinitely flexible business model allows Kroff Process Technologies to design site-specific solutions for our customers most difficult challenges.

"Solutions, not chemicals" is the governing philosophy of our company. With a focus on reducing total cost of operations, Kroff Process Technologies provides a comprehensive engineered solution to address the toughest process challenges.