LUBRICANT CASE STUDY #2

Objective: Replace competitive, chlorinated and petroleum based metal-forming fluid to address high scrap rates and porcelain enamel defects.

Customer: Domestic manufacturer of high end cooking appliances.

Recommended Coral product: CORDRAW 6186

Observed test results:

1. Dramatically reduced or eliminated scrap associated with fabrication processes.
2. Improved cleanliness of fabricated parts – allowing for better inspection of parts at the press, thereby reducing scrapping of finished items later in assembly.
3. Improved cleanliness of parts eliminated the need for flammable solvents used to remove competitive/incumbent product.
4. Provided the customer with one lubricant for use in forming difficult to form parts, with very high surface finish requirements, in both stainless steel and enameling media.
5. Eliminated lubricant residue associated scrap.
6. Eliminated welding defects associated previous lubricant.
7. Eliminated petroleum oil loading of pretreatment cleaner bath.
8. Eliminated costs associated with disposal of chlorinated oil products.

Estimated savings: approximately $250,000-$300,000 in associated chemical and materials costs annually.

Our customer was referred to us by one of their contractors to address chronic finishing concerns associated with the porcelain enameling process. The incumbent chemical supplier was unable to determine or eliminate the cause of chronic porcelain enamel defects on highly visible, critical parts. We consulted with the customer and reviewed their fabrication and finishing processes and recommended they test **CORDRAW 6186** in their fabrication processes.

The incumbent product was a heavily chlorinated, petroleum based metal-forming fluid used at elevated concentrations to form enameling steel and stainless steel parts requiring very high surface finish quality. The lubricant solution was applied via “garden sprayer” to the dies and blanks in the first stage of the three-stage, progressive die.

CORDRAW 6186 was applied at the same dilution ratio initially and applied using the same method/equipment. **CORDRAW 6186** formed the difficult parts and imparted a clear fluid film that allowed for greater ease of inspection of the parts and the dies. Comments were later made at subsequent stages in processing regarding the dramatic improvement in part cleanliness and finish. After continued testing on a wide variety of parts in both enameling and stainless steel, the use concentration of **CORDRAW 6186** was lowered to achieve an even greater economic benefit.

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Test parts formed with **CORDRAW 6186** were submitted for cleaning and porcelain enameling and the defects of issue had been eliminated. Additional operational costs associated with hand wiping and manually inspecting historically problematic parts was eliminated.

Above and beyond addressing the initial needs of our customer, we worked with them to address better methods of lubricant application to further improve their fabrication processes. Through our partnerships and cooperation with equipment companies, we were able to work with both groups to optimize process efficiencies and reduce costs.