



# THERMOPLASTICS Case Study



## Color Change Challenges

### SITUATION:

A manufacturer of custom-molded parts had the continuous challenge of transitioning from a black 10% glass-filled polypropylene (GFPP) dash to a natural high density polyethylene gas tank. The HDPE gas tank was being injected into a two-cavity mold and a cycle time of 86 seconds.

To further complicate the color change transition, the GFPP dash was made of a multi-color regrind blend of polypropylene with black pigment concentrate and black liquid UV stabilizer. These factors continuously caused extended delays and high scrap rates.

### SOLUTION:

Chem-Trend Lusin® Clean G315 purging compound was the perfect choice for this application as it was engineered to purge both filled and/or unfilled olefin-based polymers. As with all the Lusin® brand products, it contains no fillers or abrasives and provides the user a ready-to-use, low consumption product that rapidly cleans the barrel manifold and hot runner system.

At trial, the material was not only run through the barrel but also through the manifold and hot runner system. This was done to see if the purge would pick up any residual black that might be held up in the two-cavity manifold/hot runner system from a previous production run (black to natural).

Review of historical data using the competitive purge product (normal two-way run) showed the scrap rates on this product/tool to be running at twelve percent (337 rejects out of 2,833 parts). Of the 337 parts of scrap generated, 118 (35%) were directly related to contamination.

The account successfully injected the Lusin® Clean through the open mold and began making actual parts out of the purge compound in running seven cycles, which expelled residual black contamination from the prior run. The account then introduced the HDPE into the hopper and continued making parts with Lusin® G315/HDPE blend until the Lusin® was removed from the barrel (approximately four cycles).

### BENEFITS:

- Using the Lusin® Clean G315 for purging the barrel, manifold and hot runner system reduced the start-up scrap production to only ten minutes (7 cycles), compared to two hours (85 cycles) when using the competitor's product.
- Total annual estimated dollar savings on scrap reduction for this single tool was estimated to be approximately \$10,000. Adding the reduction in machine downtime costs over the year, brought the total annual savings to almost \$12,500.

