

CASE STUDY

Die Casting : 50% Plunger Lubricant Usage Reduction by Improving Tip Adherence

PLUNGER SLICK® 130

The Challenge

A global manufacturer of high pressure aluminum die castings for major automotive companies was looking to replace the plunger lubricant being used in their die casting operations. The manufacturer was specifically looking to reduce costs related to lubricant usage.

The Solution

Quaker Houghton analyzed the customer's process and recommended switching their plunger lubricant to PLUNGER SLICK® 130, a product formulated for superior performance and excellent boundary lubrication. PLUNGER SLICK® 130 incorporates the highest quality base stock to ensure consistent performance at high temperatures; this increased thermal stability allows for minimized potential decomposition products that contribute to process defects, such as porosity.

Process and Equipment

PROCESS	HIGH PRESSURE DIE CASTING
Parts	Automotive powertrain components
Material	Aluminum
Machine	2,000 ton die cast machines
Plunger Tip Material	Beryllium Copper (BeCu)

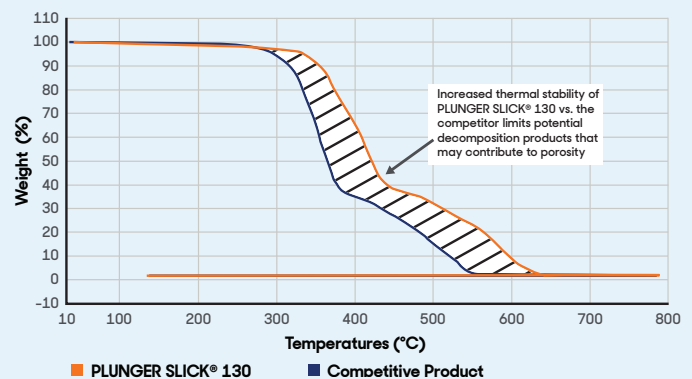
The Product

PLUNGER SLICK® 130 is a high viscosity blend of petroleum polymers formulated for aluminum die casting operations. Engineered chemistries fortified with extreme pressure additives provide excellent boundary protection for larger plunger tips and shot sleeves. PLUNGER SLICK® 130 also has higher thermal stability to minimize potential decomposition products that contribute to process defects, such as porosity Aluminum – Recommended for 2 to 6 inch plunger tips. This product is to be used at full strength with automatic lubricators. Apply PLUNGER SLICK® 130 to the shot tip before each casting cycle. Every die casting facility is unique. Production processes, die designs, and operating temperatures vary. Each operator should evaluate the amount based on their experience.

The Benefits

Through a trial period, PLUNGER SLICK® 130 showed a significant improvement in adherence to the plunger tip, allowing the customer to optimize their application and cut lubricant usage. By switching production to PLUNGER SLICK® 130, the customer was able to substantially reduce cost by cutting plunger lubricant usage up to 50 %.

Thermal Gravimetric Analysis (TGA)



PLUNGER SLICK® 130 VS. COMPETITIVE PRODUCT

