Multi-metal performance without the compromise on safety

Situation

A major US aerospace and bearing manufacturer conducted a year-long trial of cutting fluids in order to identify one that would best improve their total operating costs. The minimum fluid requirements were: aerospace approval, global availability, and semi-synthetic chemistry. The suppliers chosen by the customer were: Castrol®, Blaser, Chemetall, Fuchs, and Qualichem. The requirements for performance included multiple machined materials, Inconel, stainless steel, Stellite, titanium, tungsten, and aerospace aluminum.

Solution

Castrol surveyed the plant and determined that Hysol® SL 45 XBB would be the best choice for their process. Castrol provided a fluid control plan to monitor and maintain the coolant systems. Concentrate usage was monitored and optimized throughout the trial period and machining operations were closely monitored for improvements in part quality and tool life.

Outcome

The customer implemented fluid-related best practices with their current coolant and used this as a baseline for all of the fluids tested. Castrol Hysol Sl 45 XBB successful ran at the lowest concentration of all the fluids, 4% on aerospace aluminum and 8-10% on all other metals. It’s bacteria-resistant formula eliminated the need for tankside biocide treatment. The result was an average savings realized equal $0.21 per production hour per material, for a net overall cost reduction of nearly 73%.

Savings

- Eliminated operator safety and dermatitis concerns using a biocide-free metalworking fluid
- Increased tool life by 35%
- Reduced fluid usage by 53%