

### Challenges

A large global automotive manufacturer was looking to replace the coolant being used in their Block Machining System. The coolant being used had to be continually dosed with Kathon 886MW in order to control bacteria, and fungi growth that would lead to health and safety issues. Their Block Machining System had to be tested weekly to ensure that Kathon levels remained between 100-150 ppm. In addition the current coolant had a high chemical cost per gallon.

To help improve their operations Quaker proposed the manufacturer change the coolant to QUAKERAL® 377. Quaker wanted to show that by using this high technology, high lubricity fluid there would be visible improvements in the following areas:

- Reduction in chemical usage
- Decrease in odor
- Reduction or elimination of biocide dosing to control bacteria and fungi
- Increased biostability and sump life

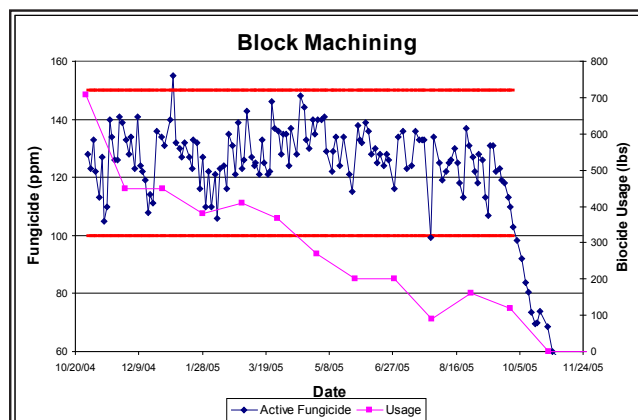
In addition Quaker wanted to show that by using QUAKERAL® 377 the manufacturer could increase their yearly cost savings.

### Providing Solutions

Since switching to Quaker's QUAKERAL® 377 the manufacturer has eliminated the following added expenses:

- Maintenance doses of Kathon 886MW
- Weekly Kathon analysis

The elimination of the fungicide dosing alone has resulted in a cost savings of \$129,324 for the year with no effect on tooling.



The previous chart shows the impact of QUAKERAL® 377 on biostability and fungicide adds.

### Product Information

QUAKERAL® 377 was developed as a metalworking fluid designed for heavy-duty machining and grinding operations requiring a high degree of cleanliness, lubrication, cooling and corrosion protection while improving finish and tool life.

- Suitable for a wide range of materials
- Titanium, Aluminum, Steel, Alloy Steels and Cast Iron
- Targeted operations
- Honing, Boring, High Speed Milling, CBN Grinding, Creep Feed Grinding, Gun Drilling, Mapal Reaming, Tapping, Hobbing, Broaching
- Meets GM Biostatic Standards
- Neat oil replacement
- Ester-based
- Free of Triazine, Chlorine, Sulfur and Phosphorous

### Process & Equipment

#### Block Machining System

<b>Parts:</b>	Block for L6 Engine
<b>System Size:</b>	140,000 gallons
<b>Part Alloy:</b>	356 Aluminum with T6 Heat treat
<b>Water Hardness:</b>	150-200 ppm
<b>Application Pressure:</b>	High pressure (5,000 psi)
<b>Filtration System:</b>	Henry System with Bolle and Kirsch polishing filters that use 30 micron inserts Zeta rods in use for fungus and mold control
<b>Specific Operation:</b>	Milling, Drilling, Reaming, Tapping, Chamfer

### Product & Process

Metalworking lubricants represent a very minor part of the costs in a metalworking process, typically less than 1%. This case illustrates the importance of correct fluid selection. The impact of the fluid can be a multiple of its costs making the price of a metalworking fluid insignificant. That's why Quaker focuses on developing fluids with the highest performance without compromise, fluids that sharpen your competitive edge.