

Challenges

A large global automotive manufacturer was looking to replace the coolant being used in two of their hobbing systems. The coolant being used had poor biostability resulting in the need for numerous coolant and biocide additions to keep the system running; a reduced sump life and excessive machine cleanouts. The coolant also contained the bactericide Triazine a known health and safety risk that the manufacturer was trying to eliminate from their chemical inventory and no longer permitting use of in their facilities. In addition the coolant was causing treatment issues at the Waste Water Treatment Plant.

To help improve their operations Quaker proposed the manufacturer change the coolant being used to QUAKERCOOL® 2776 a “block co-polymer” synthetic lubricant. Quaker wanted to show that by using this high technology, high lubricity fluid there would be visible improvements in the following areas:

- **Decrease in the amount of coolant additions**
- **Better product stability**
- **Increased sump life and recharges**

In addition Quaker wanted to show that by using QUAKERCOOL® 2776 the manufacturer could decrease or eliminate the biocide being used and increase the yearly cost savings.

Providing Solutions

Hobbing System 22	
Base Line Fluid Total Chemical Cost	\$9,210.15
QUAKERCOOL® 2776 Total Chemical Cost	\$4,340.15
Total Cost Savings	\$4,870.00

*Results after 6 months.

The change in coolant resulted in an elimination of biocide and a 53% reduction in Chemical Cost over a six month period. Annualized for a year Total Cost Savings are projected to reach \$9,740.00

Hobbing System 25	
Base Line Fluid Total Chemical Cost	\$26,020.00
QUAKERCOOL® 2776 Total Chemical Cost	\$19,301.00
Total Cost Savings	\$6,719.00

*Results after 3 months.

The change in coolant resulted in an elimination of biocide and a 26% reduction in Chemical Cost over a three month period. Annualized for a year Total Cost Savings are projected to reach \$26,876.00.

Product Description

QUAKERCOOL® 2776 is a heavy-duty machining and grinding fluid that provides a high degree of lubrication, cleanliness, cooling, and corrosion protection. It is suitable for use on difficult operations involving high alloy steel, carbon steel, and cast iron. Suitable for light-duty machining operations on wrought and cast aluminium alloys.

- **Extremely effective “block co-polymer” synthetic lubricant features inverse solubility. Reacts to heat of metal deformation to provide instant added lubrication. Product contains no mineral oil.**
- **Provides excellent corrosion protection on ferrous alloys down to concentration as low as 3%.**
- **Excellent cleanliness leaving machines and parts free of sticky residues. Rejects tramp oil easily.**
- **Formaldehyde donor-free and bland odor provides worker friendly environment.**
- **Produces little to no foam in soft to moderate water hardness, conditions, even with high-pressure scrubber nozzles.**

Process & Equipment

Hobbing System 22

Parts:	Input pinion for transmissions
System Size:	3,000 gallons
Part Alloy:	4115 modified steel
Water Hardness:	150-200 ppm
Application Pressure:	30 - 45 psi
Filtration System:	Drag out conveyor without paper filtration
Specific Operation:	Gear hobbing

Hobbing System 25

Parts:	Reaction pinion for transmissions
System Size:	6,000 gallons
Part Alloy:	4115 modified steel
Water Hardness:	150-200 ppm
Application Pressure:	30 - 45 psi
Filtration System:	Drag out conveyor with oil skimmer
Specific Operation:	Gear hobbing

Product & Process Expertise

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.

