

Challenges

A machining OEM in India was seeking a new coolant for their own machine shop to replace their current coolant which was omitting a foul odor caused by a combination of poor quality and poor maintenance. Additionally, they were looking for the new coolant to reduce costs and improve tool life. The manufacturer has a total of 35 machines in their machine shop, with a combined annual coolant volume of approximately 9,600 liters.

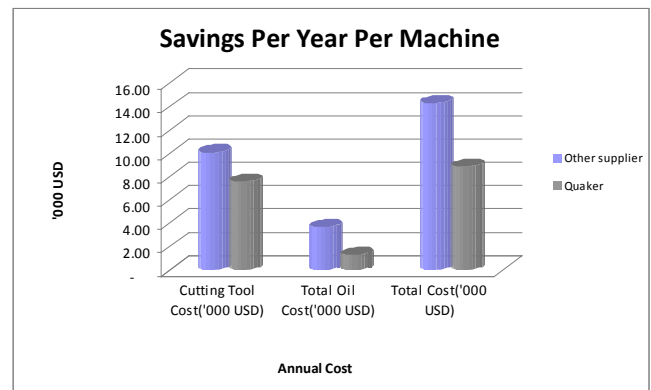
To improve the OEM's operations, Quaker recommended they upgrade to QUAKERCOOL® 7101 AFH which would not only offer better technology but also increase cost savings. By changing to this coolant, the manufacturer reduced total costs by 35% (including top-up cost, labor cost and downtime cost), as well as increased tool life – resulting in a total cost savings of USD \$2,400 (Rs 115, 023) per machine per year. In addition, the odor problem was completely eliminated.

Providing Solutions

Quaker introduced QUAKERCOOL® 7101 AFH in three milling machines for machine beds and fixtures, each machine requiring 300 liters of coolant. After a trial period of three months, Quaker was able to show – on an annualized basis – 43% savings in oil cost, 33% savings in tool cost, 50% savings in machine downtime cost, and 50% savings in labor costs per machine. In addition, a 100% increase in sump life was projected. The following tables show detailed cost savings information.

Data Per Machine	Competitor	Quaker
Concentration	8	6
Oil required for first fill (liters)	24	18
Daily water addition	20	20
% Oil top up	3.0	2.0
Monthly Oil top up (liters)	15	10
Sump Life (month)	4.0	8.0
Total Oil required (annual/ liters) for initial fill and top up	252	147
Cost of Oil (liters)	237	235
Annual Tooling Cost (USD)	\$5,400	\$3,600

Annualized Cost Savings Per Machine	
Monthly top-up reduction	33%
Oil cost reduction	43%
Tool cost reduction	33%
Machine downtime reduction	50%
Changeover labor reduction	50%
Total cost savings	35%



In addition to supplying improved technology, Quaker provided coolant management training sessions – including coolant handling and best practices – to the manufacturer's employees in order to help them better manage their own fluids. This type of value-added support was appreciated by the manufacturer, and is an example of Quaker's partnership approach to providing customer solutions.

By changing to QUAKERCOOL® 7101 AFH, the manufacturer also experienced improved machine cleanliness and rust protection, an odor-free and non-carcinogenic coolant, and improved surface finish.

Based on positive results of the trial, the manufacturer plans to expand use of QUAKERCOOL® 7101 AFH to all 35 machines in the machine shop. The manufacturer – an OEM – is confident in Quaker's product line and has begun recommending Quaker coolants to its customers.

Product Description

QUAKERCOOL® 7101 AFH is an advanced ester-based, bacteriostatic, semi-synthetic fluid with high mineral oil content. Developed for a multi-purpose action in machining and grinding, where surface finish is a major requirement, QUAKERCOOL® 7101 AFH is well suited for traditional as well as heavy-duty machining operations on cast-iron, steel and alloy steel.

Process & Equipment

Part:	Machine Beds and Fixtures
Material:	Steel and Cast Iron
System Size:	300 liters
Part Alloy:	Steel Alloy and Cast Iron
Water Hardness:	DM water with <20 ppm hardness
Concentration:	6.0%
Application Pressure:	15 bar
Filtration System:	Metal net/mesh type filtration
Specific Operation:	Milling

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 is why Quaker focuses on developing fluids with the highest performance without compromise, fluids that sharpen your competitive edge.