ASHBURN CHEMICAL TECHNOLOGIES

Case Study

ASHBURN 7090 Improves Part Finish and Tool Life in Multi-Operation Machining of Aluminum

CHALLENGE

A Midwest electronics manufacturer was looking to lower costs and improve finish on machined aluminum electronic parts. A coolant was needed that would perform in multiple machining operations, including a critical tapping application that was requiring a high mix concentration.
Ashburn Chemical was brought in to analyze the operation and provide a product recommendation.

Part Machined: Electronic Component Housing
Material: 6061 Aluminum
Operations: Milling, Drilling, Boring and Tapping

RECOMMENDED SOLUTION

Ashburn 7090 was recommended due to its excellent performance on non-ferrous materials including aluminum. 7090 is an economical semi-synthetic coolant that runs very clean and provides excellent lubricity in tapping applications.
7090 was tested against two competitor coolants: a low-cost local product and a national brand semi-synthetic coolant (incumbent product).

RESULTS

	7090 Semi-Synthetic	Competitor A Low-Cost Local Soluble Oil	Competitor B (Incumbent) Low Oil Semi-Syn
Concentrate Cost	17% Lower Cost	40% Lower Cost	-
Machine Condition	Excellent	Surface and Table Rust	Good
Foam Control	Excellent	Poor	Excellent
Part Finish	Excellent	Fair	Good
Staining	None	Minor	None
Tool Life	Excellent	Good	Good
Required Concentrate for Tapping	11%	10%	14%
Residue	Slight – Excellent for Post Process	Heavy – Poor for Post Process	Slight – Excellent for Post Process

The low cost soluble oil was effectively the highest cost product due to high carry-off, low tool life, part staining and poor machine condition.
Ashburn 7090 outperformed the incumbent product in tool life and part finish while leaving the machine in cleaner condition. 7090 was able to be run at a lower concentrate while achieving the required tapping results. This lower concentrate usage along with lowered initial cost has resulted in a significant cost savings.