Versatile Coolant for Multiple Operations and Metals

MACHINERY MANUFACTURE (USA)

AGRICULTURE MACHINE COMPONENTS

Castrol Alusol® AU 70

PROJECTED ANNUAL SAVINGS: $56,735

THE SITUATION

An agriculture equipment manufacturer was using a chlorinated coolant for their machining operations. This fluid was scheduled to be obsoleted, so they decided to test 2 chlorine-free competitive coolants for replacement.

The initial testing would be done in a machining operation where ¾" holes were being drilled, finished, and threaded into welded steel plate and tube.

BEFORE

- Chlorinated, semi-synthetic coolant working well
- Concentration target of 10-14%
- The competitor's fluid could not produce good parts and generated $15,000 in scrap

AFTER

- Chlorine-free semi-synthetic coolant, Castrol Alusol AU 70
- Tool life equal to previous fluid
- Projecting 30-40% less coolant usage
- Concentration target of 6-9%
- Cleaner work area compared to the chlorinated coolant

THE SOLUTION

- Alusol AU 70 worked in all operations in the plant at a concentration range of 6-9%
- The plant processes a wide variety of materials, so the coolant needed to work on multi-metals.
- Coolant usage is projected to drop 30-40% once maintenance changes are made. Currently, the Alusol AU 70 is carrying out in such small quantities, that the pre-mix make-up coolant is driving up concentrations. Water lines are being added to improve this condition.
- Tool life was equal to that of the chlorinated fluid.
- Part finishes seemed to be better, but this was not a measurable KPI in the plant.
- Machine operators liked the better tramp oil separation and cleaner machine environment.

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RECOMMENDATIONS

Alusol AU 70 was used successfully on many different operations and metals. The metals included 1000 and 4000 series steel, cast iron, 300 series stainless steel and 6000 series aluminum. The operations included drilling, milling, turning, tapping, and grinding. The coolant pressures ranged from 45 psi up to 1000 psi with no foam. Filtration ranged from chip drag conveyors to paper bed filters.

CONCLUSION

Plant management was extremely worried when the competitor's chlorine-free fluid could not produce any quality parts.

Castrol introduced Alusol AU 70, and it performed great right from the start. The plant was impressed that a chlorine-free coolant could perform so well with no changes or adjustments to their process.

In addition, coolant usage is projected to drop by at least 30% leading to **$56,735 in anticipated annual savings.**

"The new coolant separates tramp oil better than the previous one, so the sump stays cleaner for a longer period of time."
– Machine Operator

Agriculture plant makes planters and cotton harvesting equipment

OTHER POTENTIAL APPLICATIONS

Alusol AU 70 is a high performance semi-synthetic coolant for ferrous and non-ferrous applications. It will perform multiple operations on many different metals making it a versatile, heavy-duty fluid.