
Cutting Tools: Keep it Clean



Henkel

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The first rule in cutting fluids is to keep the tooling cool. But there are advantages to keeping it clean, too.

“When you’re talking about coolant, the most important quality is in the first four letters,” said Jonathan Sheibels, Business Development Specialist, Cleaners and Lubricants, for Henkel Adhesive Technologies. “Our job is first to keep that tool cool at all times, and also to wash away chips and debris.”

But why stop there? Henkel produces a complete line of BONDERITE® L-MR cutting fluids that brings additional value to the customer’s production process. One unique way BONDERITE® L-MR cutting fluids add to the value is by creating a high level of detergency so that the fluid continuously cleans the cutting tools, the arbor, the magazine and the work piece.

The continuous cleaning action helps to prevent residue that can build up inside a machine, which can blind operators’ machine windows and create performance issues. In particular, the BONDERITE® L-MR cutting fluids are designed to help keep the machine, the area and the work piece clean.

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BONDERITE® CLEANS UP A DIRTY PROCESS QUICKLY

In fact, one of the things new BONDERITE® customers often notice is that the machine is much cleaner – almost immediately – when they switch from another cutting fluid technology. “Most of our customers, the first time they see our product in action, are surprised at how clean it is,” said Sheibels. “We often hear things like, ‘Wow! I’m actually seeing my machine again.’” In Sheibels’ experience, customers that convert 100% to Henkel cutting fluid technology report a noticeably cleaner machine and tooling in just a few days.

THE MAGIC IS IN THE FORMULA

The cleaning feature is built right into the technology; no additives are required. In fact, an additive can’t compare with the results. “A high level of detergency that helps to maintain the machine and cutting tools has to be chemically designed into the technology,” said Sheibels.

Typically, tooling cost is estimated to run 10 times higher than most metalworking fluid cost. One of the biggest challenges for Henkel customers is to recover that cost. BONDERITE® cutting fluids and the cleaner process they provide can help customers do that in three ways: reduce waste, decrease production downtime and improve downstream cleanliness.

CLEANLINESS CREATES COST REDUCTIONS

One of the areas where many customers are looking to improve operations is in waste management, for both cost and environmental reasons. In the case of a large operation, changing the cutting fluid every six months to a year can add up to as much as \$100,000 to \$150,000 ... just in disposal costs. But BONDERITE® cutting fluid formulations are designed to have a long bath life, reducing costs. “I have some customers that have fluid that’s eight or nine years old. That’s a long time,” said Sheibels.

Another way that BONDERITE® cutting fluids reduce costs is by helping to improve operations. The most important part of the production process is where the tooling meets the substrate. BONDERITE® helps that work piece area operate with more precision by keeping it clean. Also, the arbors that the tools sit in are important to the process. Even minimal residue buildup can offset the arbor by just a few millimeters, which in turn could offset the tooling system. This situation can potentially lead to serious quality issues with the machine. “By keeping everything clean, you have a lower risk for failure,” said Sheibels.

Cleanliness is an especially high priority in some types of precision machining, such as manufacturing valve bodies for transmissions, or grinding gears, camshafts and crankshafts – i.e., situations where tolerances are very tight.

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ADDITIONAL BENEFITS OF BONDERITE®

Machines that stay cleaner for longer periods of time provide better visibility, improved production efficiency and increased safety. Being able to see inside the machine, and the tooling in action, lets operators quickly and easily observe the performance of the machine.

In large operations that have tool commodity management on-site, once re-grinding and sharpening are complete, there is considerably less post-washing and cleaning required before resetting the tool, when using BONDERITE® L-MR.

Henkel technology also works well with new technology and materials such as diamond cutters, multiple substrates and applied metal coatings designed to prolong tool life. "We don't run into problems with these things at all," said Sheibels. BONDERITE® L-MR provides not only a clean cutting fluid technology, but also a flexible one that complements contemporary process needs. Our broad range of BONDERITE® L-MR products can help Henkel select characteristics such as detergency and lubricity to easily conform to a customer's unique process.

The ultimate goal of a cutting fluid technology is to keep the tooling cool and to keep the fluid in the sump – not on the parts, not on the tooling and not on the conveyors. With BONDERITE® L-MR, you can see the difference.

For more information, visit
www.na.henkel-adhesives.com/cleanandlube

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A CLEAN PHOTO FINISH

Henkel regularly runs Falex Pin & Vee and tap-torque testing on its BONDERITE® L-MR cutting fluid products. These tests measure lubricity characteristics against competitive products to gauge performance. One benefit that becomes clear during testing is BONDERITE® L-MR cutting fluid's detergency. See the results for yourself in the photos below.



BONDERITE® B-Series Bath



Competitor A Bath



BONDERITE® B-Series Machine



Competitor A Machine

