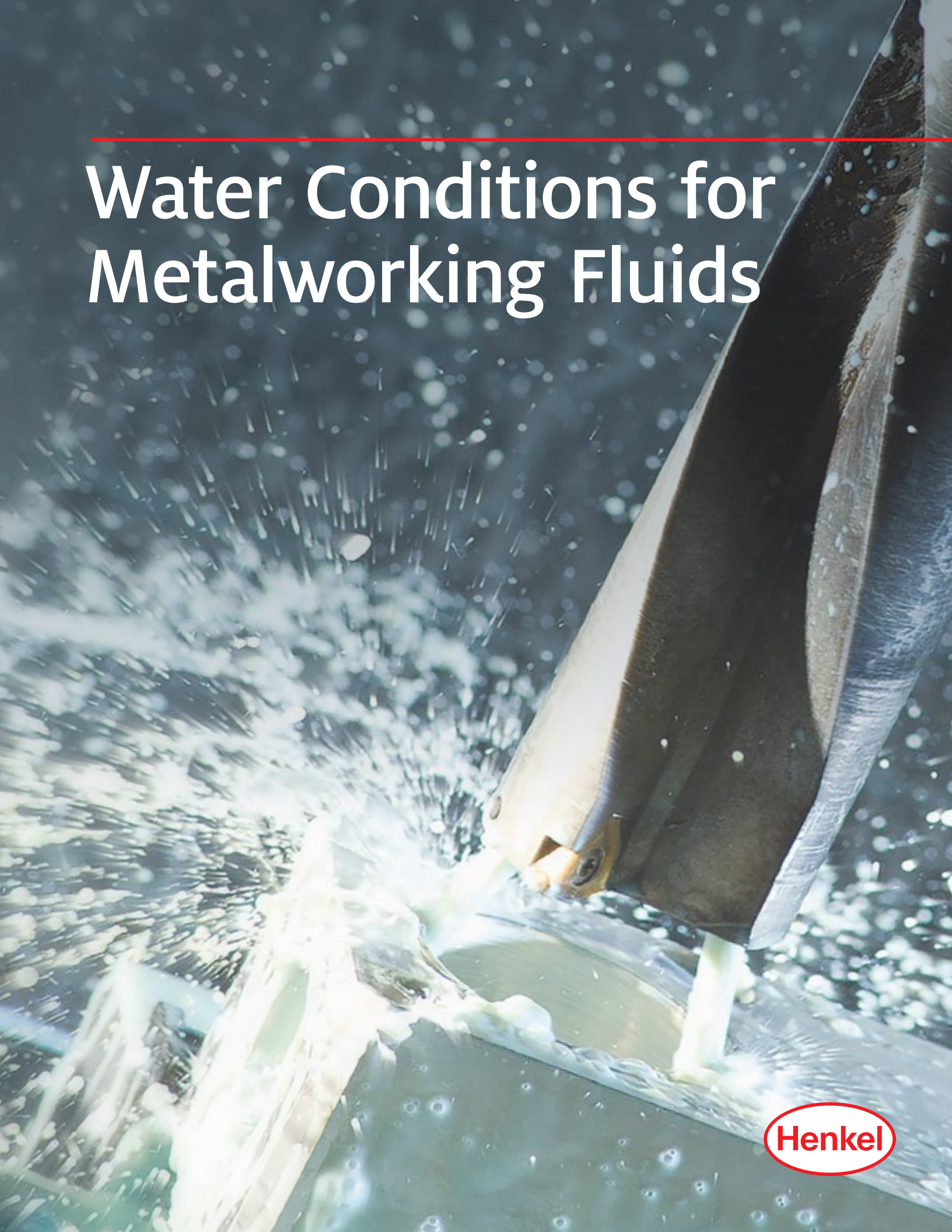
Water Conditions for Metalworking Fluids



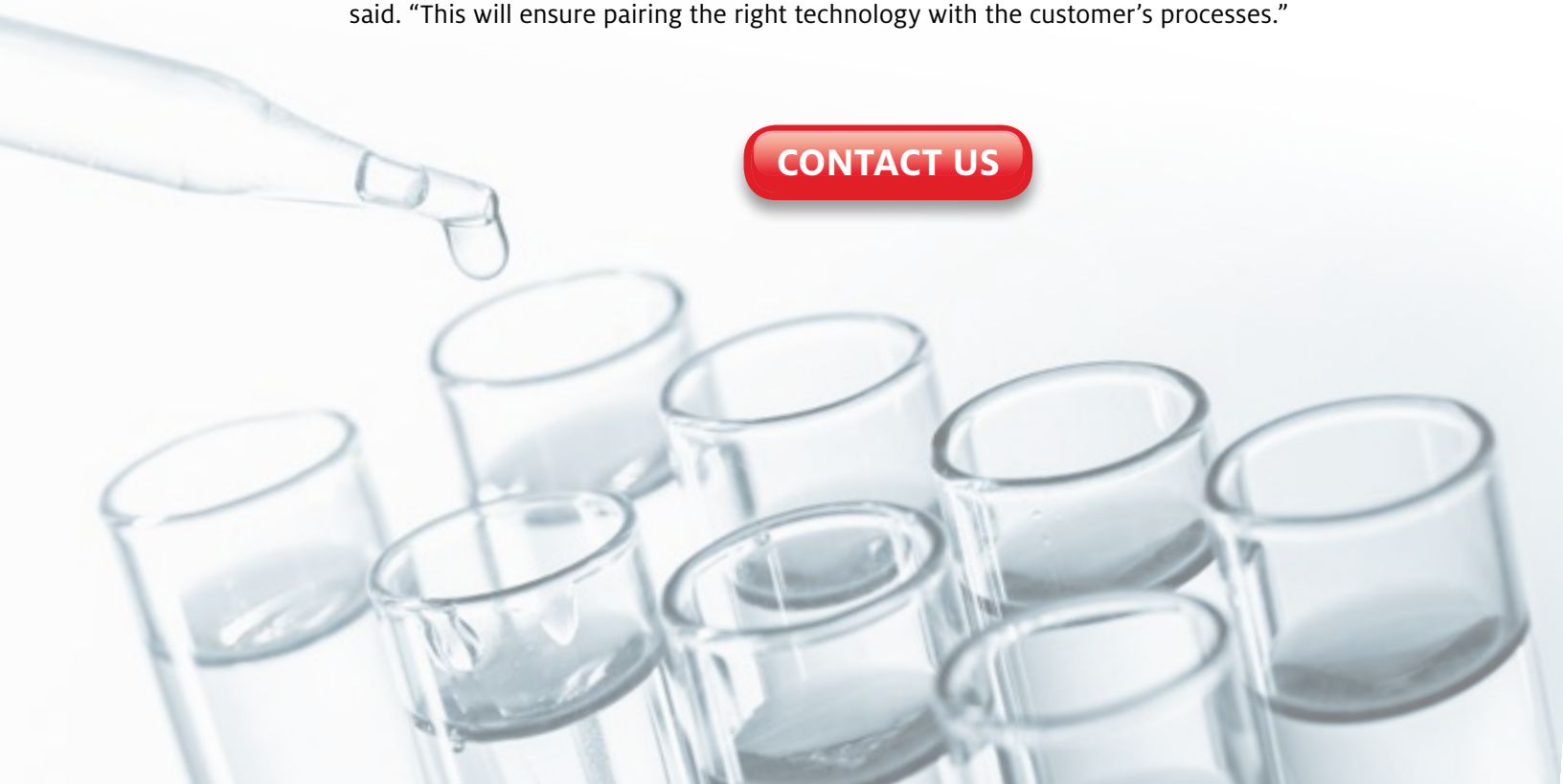
Water Conditions for Metalworking Fluids

Henkel chemistry improves cost, process and cleanliness by focusing on a forgotton element: H_2O.

Henkel's customers in the metalworking industry worry about things like tooling, machinability, performance, part finish and operating cost. For these engineers and manufacturing professionals, concerns over water quality are often farther down the list. But Henkel brings a different point of view: "For us, process water quality is a priority. We want to understand the customer's process water integrity," said Jonathan Sheibels, Business Development Specialist at Henkel Cleaners and Lubricants.

In fact, the first thing that Sheibels wants to find out from a potential new customer is what's in the water the customer is using to run the production lines. "You fill up that process tank; I want to understand your water integrity," is one of his opening requests. If there are multiple processes, he'll take several water samples back to the lab for analysis and performance testing. "We will run a battery of tests using the customer's process water and our technologies before we make product recommendations," Sheibels said. "This will ensure pairing the right technology with the customer's processes."

CONTACT US



MATCHING THE PRODUCTS TO THE SOURCE

Sheibels wants to know what's in the water he's going to be working with – in detail – before he suggests the technology to use with it. "The majority of the end-use metalworking fluid is your water," said Sheibels. "Customers sometimes forget that."

In fact, most metalworking fluids have more than 90% water married with the fluid technology during operational use, affecting both the process and the results. But Sheibels' water-testing commitment isn't a one-and-done procedure. "We also like to do quarterly reviews," he added. Reviews help track changes in water conditions and maintain the optimal product balance.

"Hardness is cumulative; it always grows," said Sheibels. Water condition is critical to the performance of metalworking fluids. If it's too hard, you may experience corrosion issues with some alloy substrates, resulting in possible scrap and adding manufacturing costs. If the water's too soft, you may experience an increase of foam, which can interfere with the process enough to trigger a fail mode and become a housekeeping or safety hazard. But the softness or hardness of a water source is only the beginning of matching the correct metalworking fluid products. "We need to understand pH, conductivity, sulfates, hardness, biologicals and other factors," said Sheibels.

THE BEST FORMULA: FORMULATING WITH BIO-RESISTANT COMPONENTS

Longevity is another critical feature of Henkel's metalworking fluid performance. "Customers want to keep their bath life as long as possible these days," said Sheibels. And Henkel's approach is to recommend product technologies aligned to the customer's water conditions to extend bath life and deliver optimal metalworking performance.

One source of entry for bacteria is the customer's inbound process water. Henkel formulates with bio-resistant components in its technologies. By resisting bacteria growth, Henkel technology reduces waste costs and environmental impact while improving health and safety and ensuring sustainable coolant bath life.

Water Conditions for Metalworking Fluids

THE POWER OF HENKEL CHOICE

One of the greatest advantages Sheibels can offer his customers is the matching power of more options for an individualized solution. “Our portfolio range helps us in both soft- and hard-water environments,” said Sheibels. “Knowing the water condition is important to us, because it helps us choose the right products from our portfolio.” Understanding the customer’s water helps Henkel choose the right products to avoid problems before they start. “We want to make sure our product recommendation is based on the customer’s machining process needs and process water capabilities, to help them address their challenges and reduce overall costs.”

TAPPING SAVINGS WITH SYNTHETICS

One manufacturer Sheibels worked with had been fighting high Reverse Osmosis (RO) operating cost. Sheibels wanted to deliver savings by utilizing the manufacturing process water instead of being dependent on the costly RO system. He provided the customer with three options:

- Technology for current soft RO water
- Technology for a blend of soft and hard water
- Technology for all types of water

The customers chose to go from an oil-containing semi-synthetic to a full-synthetic utilizing their traditional in-plant process water. Now, it has an application that uses traditional process water coming out of taps, and is able to drastically minimize the use of its RO system, resulting in significant cost savings and complete machinability.

The only challenge during the changeover has been cultural: The new product looks different. “It’s the difference between traditional skim milk emulsion and a true solution that you can read a newspaper through,” said Sheibels. It may take some getting used to, but that’s a lot easier when you’re saving money while doing it.

Contact us for more information or visit **na.henkel-adhesives.com/cleanandlube**

HENKEL CORPORATION
Madison Heights
32100 Stephenson Highway
Madison Heights, MI 48071
Phone: (+1) 248 583 9300
www.na.henkel-adhesives.com

LT-8271