

Focusing on sustainable formulations

The front end of beverage can lines present all manner of challenges that are being managed by lubricant and chemical specialists as canmakers chase sustainability. Nisa Ali reports

Washing and priming is an essential part of D&I beverage can manufacturing, but is highly energy and water intensive, so anything that helps reduce energy, chemicals and water consumption will improve sustainability.

Quaker Houghton, a global leader in industrial process fluids, has developed a specialised approach to monitoring and managing the can washing process.

John Booker, global product application manager, container, said his company's QH Fluid Intelligence system was an "innovative ecosystem designed to support our partners in measuring, controlling, and optimising their QH fluids processes throughout all production stages".

"By reducing manual intervention and optimising fluid consumption, our partners enhance process stability, achieving greater performance at a lower total cost of ownership while enabling sustainability at scale," said Booker.

Flexible offering

QH Fluid Control WSC was developed in response to customer needs, he said. "This cutting-edge equipment improves the way of monitoring and overseeing the can washer system, offering reliable and accurate dosing measurements with a real-time consumption and cost data platform."

The system provides remote control, offering more flexibility. "With the ability to programme and configure the units remotely, there is no longer a reliance on physical visits or installations by engineering teams."

In addition, he said the longevity of the sensor "ensures uninterrupted production, eliminating the need for sensor replacements and expensive maintenance contracts".

Quaker Houghton is also working on biocides, in particular the processes that release formaldehyde, which has attracted regulatory attention in Europe, the Middle East and Asia regions.

"We have developed completely formaldehyde-free materials that are truly biostable. These are already running at many of our customer sites with more expected to convert in the coming months."

He added that the company was also working on removing carcinogenic, mutagenic, and reprotoxic (CMR) substances from the supply chain, stating that Quaker Houghton was "well on track to complete that goal".

Products launched in 2023 include a new neat oil cupping lubricant and bodymaker coolant that have expanded the company's portfolio of sustainable offerings.

"Our 3012 series neat oil cupping lubricants provide excellent lubrication properties both in cup formation and bodymaking operations." The lubricants have been "designed to be easily washed, reducing the load on the washer compared to conventional neat oil technology".

The 530 series bodymaker coolants operate at low concentrations without the need for supplemental levels of tramp oil, he said. "This improves washer performance and reduces the load on wastewater treatment," he said, adding:



"Excellent lubricating properties produce less smut in the forming operation and presents an easier to clean can to the washing process."

Cooler cleaners

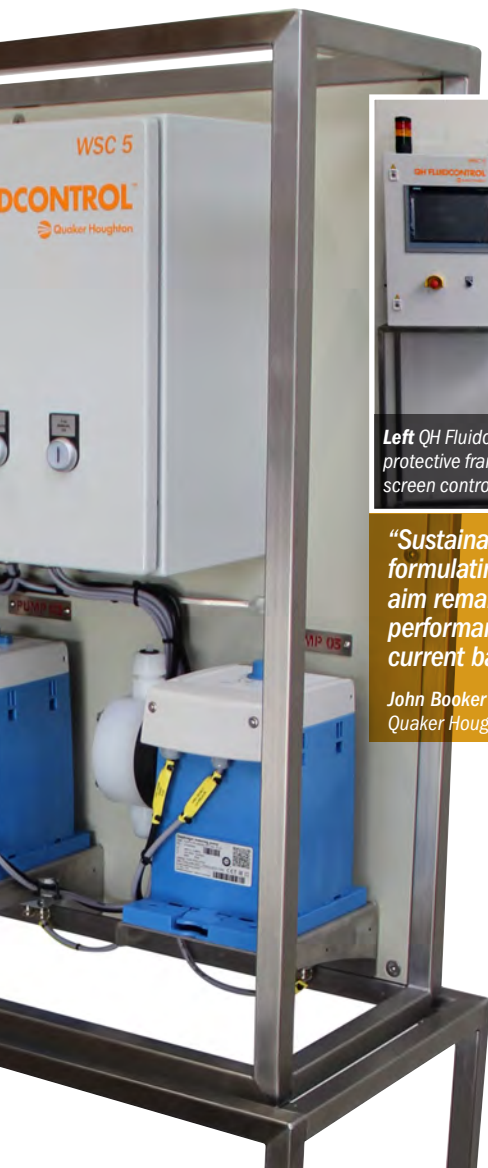
The industry has been looking for a more sustainable approach to production without losing the quality of the can. One way is for washers to be run at lower temperatures, which would help reduce costs and energy consumption.

Quaker Houghton has introduced 301 (two pack) and 3311 (single pack) chemistries that enable washing at lower temperature temperatures of 40-50 deg C.

"Globally available, our washer chemistries are already operating in multiple manufacturing plants. Customers have been able to reduce temperature and gas consumption, in some cases by up to 40%," said Booker.

Water consumption has also been reduced "significantly", with savings in excess of 15% in some locations.

"Sustainability is a cornerstone of our formulating philosophy and our primary aim remains to improve our customers' performance metrics compared to their current baseline without any compromise," he said.



Left QH Fluidcontrol WSC 5 dosing pumps and measuring units inside a protective frame for safety reasons. **Above** QH Fluidcontrol WSC 5 touch screen control board including fluid data presentation

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evolving requirements of the canmaking industry. These lubricants offer superior performance, enabling manufacturers to achieve optimal results in terms of can forming processes.”

Highlighting three of the Wisconsin-based company’s top performers, Foti said JAX “embraced the challenges and opportunities” of collaboration.

“Compresyn is a complete line of synthetic and partial synthetic compressor fluids blended with innovative patented and patent-pending formulations for all industrial and food manufacturing and packaging applications. There are several suitable NSF H1-registered solutions.

“JAX Aqua-Guard FG ensures food-grade safety by adhering to strict regulatory guidelines. It is a metal-forming lubricant for presses, beading and flanging, and provides excellent sheet coverage with no build up and improved flow of the finished product exiting the press. It is currently H1 registered, and a 3H version is in development.

“Magna-Kote 467 FG-3H has exceptional metal-wetting characteristics and provides

Right Jax products come in drums or pails, apart from Compresyn, which is only available in this specific packaging, lower right

“We provided a solution that maintained lubricant consumption while providing an H1 registered product at a reduced cost.”

Chris Foti
JAX



improved finish, minimizing burning and preventing loading of forming components. It’s developed specifically for use in can beading and can flanging machines.”

Collaborative projects

Acknowledging demands from canmakers for hard-wearing and long-lasting parts, Foti cited sanitary end press tooling. He said: “We worked with a manufacturer on this issue to formulate the JAX Aqua-Guard XLC-FG, which demonstrates improved performance under heavy loads. This improved performance helps to extend tool life, minimises burring, and provides a cleaner finish.”

In another example, a canmaker asked JAX to optimise lubricants for an oven operating at a lower temperature. Foti explained: “While working with this customer at plant level, we discovered that the product they were using was specifically designed for applications with much higher temperatures than were encountered.”

JAX recommended switching to JAX Perma-Gear FG, which is a product based on a different synthetic base fluid. “We provided a solution that maintained lubricant consumption while providing an H1 registered product at a reduced cost,” he said.

More information:

www.quakerhoughton.com
www.jax.com



Food grade

When canmakers and canners require food grade lubricants, those that comply with regulations and are effective are registered with independent US-based NSF International, which develops public health standards.

With a global network of offices, NSF has a simple three grade classification for food grade lubricants: H1, H2, and H3, which is often labelled as 3H for the safest food grade products.

At lubricant specialist JAX Inc, vice-president of technology Chris Foti has more than 20 years’ experience as a lubricant chemist and formulator. He oversees all lab operations, including technical support, used-oil analysis, R&D and quality control for grease, oil, and aerosol products.

JAX offers more than 200 NSF-certified H1 and 3H lubricants for the food industry, he says, and describes his company’s dedication to research and focus on collaboration with manufacturers, saying: “What sets our lubricants apart is their ability to address the