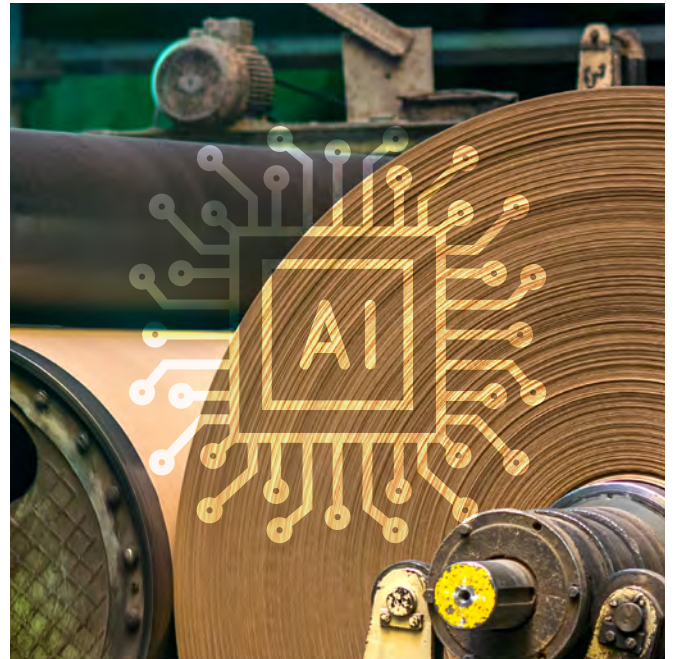


AckumenTM MCA-iTM

The monochloramine solution informed by artificial intelligence with actionable insights

As a manufacturer of quality packaging, you face some daunting challenges **these days**: the pressure to use less water, rising contamination in recycled OCC, and greater reliance on anaerobic digesters for effluent treatment, just to name a few. Unfortunately, adapting to these realities can mean adding more chemistries which, in turn, can increase process variability. And that can mean unscheduled shutdowns, not to mention additional costs.

That's why Buckman has introduced an all-new monochloramine program called Ackumen MCA-i, a breakthrough, chemical/digital solution that uses artificial intelligence with actionable insights to stabilize the wet-end process, dramatically improve performance, and reduce overall chemical costs.



A superior microbicide. The ultimate way to manage it.

MCA-iTM combines our best-in-class monochloramine chemistries with state-of-the-art sensing technology, cloud based data analytics, 24/7 expert monitoring and analysis, and accurate

predictive modeling to take the work—and the guesswork—out of managing your effluent and paper machine systems.

It's not about data. It's about actionable insights.

With conventional sensors and digital applications, you can get too much data and not enough meaningful insight. But what if you had the power to see all and the ability to make every decision easy?

Ackumen™ MCA-i™ collects data and lots of it. Its state-of-the-art IoT hardware and software includes an advanced system of wireless

sensors along with cloud-based data you can trust. But it doesn't stop there. It takes system monitoring and management beyond the data dump to the insights you care about most and delivers them to you in simple, easy-to-read, actionable system visualization graphics, alarms and notifications via Ackumen, Buckman's remote process monitoring system.

What's an insight?

An insight is the detection of a pattern of anomalous behavior; the analysis of its root cause in measurable, rational terms; and finally, a recommended course of action to resolve the issue. MCA-i gives you the power to see fouling patterns and corrosion, identify changes in product or water usage, detect process changes, and much more.

Whether at your desktop or on your mobile device, you'll know in real time the status of your system. You'll clearly see how your KPIs are tracking. You'll know at a glance whether an action is needed now or in five days.



Dosing has never been so precise.

With MCA-i, accurate sensor-controlled dosing is tied to production rates, grade changes, pH, ORP, chlorine residual, freshwater usage and more. Plus, MCA-i enables you to maintain

broke health via a consistent dosage as well as modulated treatment based on different types of output. So you can increase process stability, efficiency, and cleanliness.

Expert monitoring, benchmarking, and predictive modeling mean you don't have to go it alone.

MCA-i is backed by 24/7 monitoring and analysis performed by data scientists and engineers in our Insights Lab. The Lab deals with events as they happen, assessing every alarm and eliminating false ones.

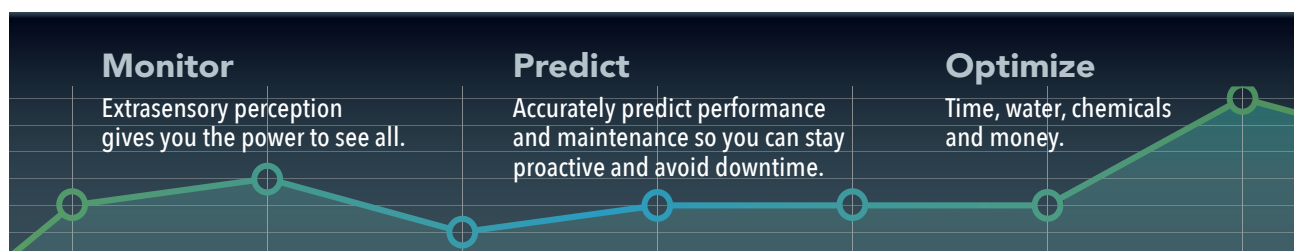


Chemical engineers working closely with data science experts enable us to see around the bend and analyze patterns that are not visible to the naked eye.

Smart maintenance keeps MCA-i doing its job.

MCA-i probes and sensors are equipped to indicate hours in service. This enables the Lab to track calibrations and overall health and create a service calendar for components to

be cleaned, calibrated or replaced. These parts are delivered to you automatically. So you have no unnecessary downtime due to equipment breakdown or extended maintenance.



Safety features eliminate worry.

MCA-i comes with feed equipment designed for consistent, accurate delivery with a wide application range and flexible dosing options. Even more important, it offers industry-leading safety. All unit alarms come to your phone. And our feed equipment is the only technology on the market with these advanced safety features:

- Leak detection
- A built-in separator to keep neat chemicals apart in the case of a line break or other issue
- Automatic flushing of all application lines in case power is lost
- Regular inspection by Buckman personnel to facilitate efficient, safe operation

With MCA-i, the potential for human-chemical contact is greatly reduced. And, Buckman's MCA chemistry is environmentally friendly, reducing the potential toxicity of your mill's effluent. Chemical discharge to lakes and rivers can be significantly reduced.

See. Understand. Solve.

Globally, more than 300 customers have switched to Buckman MCA chemistry. Now, with Ackumen™ MCA-i™, mills can use the power of artificial intelligence with actionable insights to enhance performance even more. MCA-i™ can help you stabilize your overall papermaking process and improve the quality

and consistency of your effluent. You can boost performance from your functional chemistries and lower your total cost of operation while improving uptime and protecting your equipment. And you can improve the overall quality of your paper, increasing your yields and margin.

Gain the insight you need to manage MCA better.

Connect with your Buckman representative or visit buckman.com to learn more about Ackumen MCA-i.



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Seller warrants that this product conforms to its chemical description and is reasonably fit for the purpose referred to in the directions for use when used in accordance with the directions under normal conditions. Buyer assumes the risk of any use contrary to such directions. Seller makes no other warranty or representation of any kind, express or implied, concerning the product, including **NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS OF THE GOODS FOR ANY OTHER PARTICULAR PURPOSE**. No such warranties shall be implied by law and no agent of seller is authorized to alter this warranty in any way except in writing with a specific reference to this warranty. A1115H (04/22)

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