

# SPECTRUM™ XD3899 MICROBIOCIDES

The industry standard for reducing microbial activity in papermaking



- Improved productivity
- Improved pulp/sheet quality
- Reduced corrosion rates
- Reduced downtime
- Reduced operating costs

## Often Imitated, Never Duplicated

Spectrum™ XD3899 microbiocide virtually eliminates microbial activity in papermaking. Less microbial activity means improved pulp and sheet quality, increased machine efficiency and greater productivity.

Spectrum XD3899 microbiocide drastically reduces microbial activity throughout the entire process, providing a truly clean machine. From the machine stock system to the headbox and throughout the white water system, Spectrum XD3899 microbiocide effectively controls all types of microorganisms. Additionally, this oxidizing biocide is registered with the EPA, approved by the FDA and BfR, and notified under the European Biocidal Products Regulation, offering an extra level of safety and peace of mind.

Before the introduction of Spectrum XD3899 microbiocide, eliminating microbial activity was both expensive and potentially hazardous, as is the case with most other oxidizing biocides. With Spectrum XD3899 microbiocide, you can safely control microorganisms in the papermaking process without the adverse side effects common



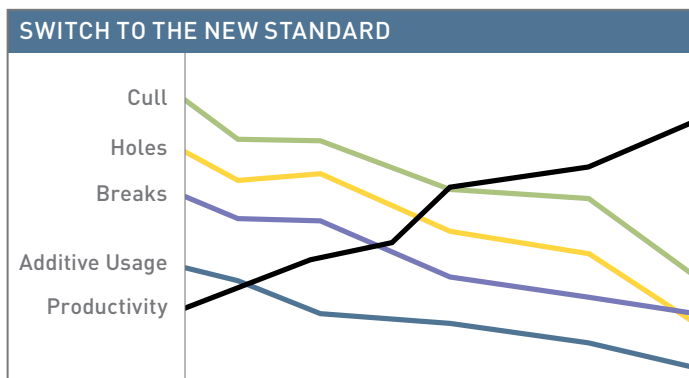
Headbox treated with a competitive biocide after eight weeks (left) and same headbox treated with the Spectrum XD3899 microbiocide after eight weeks (right).

to other oxidizers and do so at an economical cost. In fact, gains in production and sheet quality can often be achieved at a cost equal to or less than your existing microbiological control program.

## The Industry Standard

Control microbial activity and you'll improve sheet quality. With fewer sheet holes, defects and breaks, you'll be able to attain new productivity standards and lower your overall operating costs. Since the introduction of Spectrum XD3899 microbiocide it has become the industry standard for microbiological control.

Make Spectrum XD3899 microbiocide your best practice and you'll see quality and cost improvements throughout your operation. You'll reduce your additive usage, eliminate felt degradation and minimize corrosion on your machine. With a truly clean machine, you'll have less cull and require less downtime for boilouts and washups.



Every week another paper machine converts to the Spectrum XD3899 microbiocide.

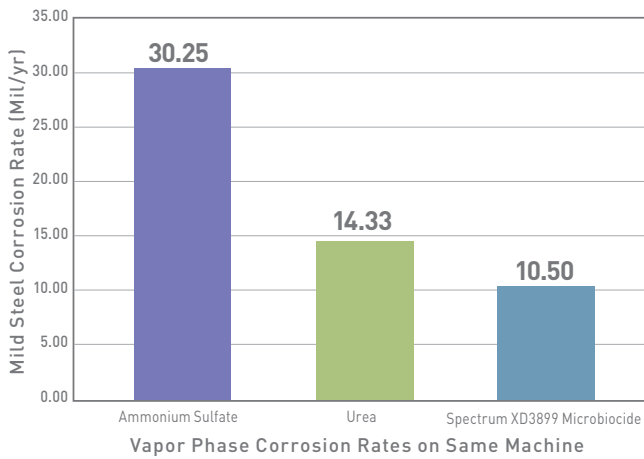
When you consider all of the benefits that Spectrum XD3899 microbiocide has to offer, it's easy to understand why it's the most widely used microbiological control program in the paper industry.

## Lower Overall Corrosion

When selecting an oxidizing biocide for microbiological control, you must consider its impact on corrosion. Some of the aspects of the biocide to consider are its contribution to chloride levels, its impact on oxidation/reduction potential (ORP) and how it's produced.

When compared to other biocide programs, Spectrum XD3899 microbiocide has been proven to contribute less to chloride levels, to use as much as 75 percent less sodium hypochlorite and to have a low ORP. And, unlike competing programs, Spectrum XD3899 microbiocide is produced using a state-of-the-art monitoring and control system that strictly controls biocide quality and feed rates.

Most notably, numerous commercial applications have proven time and time again that Spectrum XD3899 microbiocide is less corrosive than other oxidizing biocide programs. Make the switch today and you'll extend the life of your felts, reduce your usage of papermaking additives and improve worker safety.



## Automated Dosing and Control

Spectrum XD3899 microbiocide is produced onsite using patented dosing equipment and Solenis' proprietary OnGuard™ XD monitoring and control system. The dosing equipment blends an ammonium bromide solution with sodium hypochlorite and mill fresh water under required reaction conditions to ensure 100 percent conversion of the biocide components. By strictly controlling the reaction, the dosing equipment ensures that only the intended biocide is produced.

Spectrum XD3899 microbiocide is only generated when needed and is fed intermittently, allowing for reduced biocide usage. The dosing equipment also automatically adjusts biocide production to ensure consistent biocide quality.

A single dosing unit can treat up to six feed points and each feed point can be interlocked with a different signal from the paper machine. A programmable logic controller is used for feed skid operation and can be used in conjunction with the mill's distributed control system.

Key features of the dosing equipment and the OnGuard XD monitoring and control system include:

- Closed-loop control (feed-back and feed-forward)
- Remote monitoring and control
- Proportional dosing
- Automatic water flush of lines
- Multiple feed point interlocks
- Notification of feed problems

## BENEFITS BY MARKET

|                             |  |
|-----------------------------|--|
| <b>Packaging</b>            | <ul style="list-style-type: none"> <li>• Improved sheet strength</li> <li>• Improved wet end chemical efficiency</li> <li>• Improved uptime and yield</li> <li>• Reduced corrosion rates</li> <li>• Reduced operating costs</li> <li>• Reduced sheet odor</li> </ul>         |
| <b>Printing and Writing</b> | <ul style="list-style-type: none"> <li>• Improved uptime and yield</li> <li>• Improved wet end chemical efficiency</li> <li>• Reduced corrosion rates</li> <li>• Reduced operating costs</li> <li>• Reduced sheet defects</li> <li>• Reduced starch degradation</li> </ul>   |
| <b>Tissue and Towel</b>     | <ul style="list-style-type: none"> <li>• Improved machine cleanliness</li> <li>• Improved uptime and yield</li> <li>• Improved wet end chemical efficiency</li> <li>• Reduced corrosion rates</li> <li>• Reduced operating costs</li> <li>• Reduced sheet defects</li> </ul> |
| <b>Recycled Pulp</b>        | <ul style="list-style-type: none"> <li>• Improved pulp quality</li> <li>• Improved uptime and yield</li> <li>• Reduced corrosion rates</li> <li>• Reduced operating costs</li> <li>• Reduced scale formation</li> <li>• Reduced stickies deposition</li> </ul>               |



The Spectrum XD3899 microbiocide is produced onsite using patented dosing equipment.





# Solenis

## Strong Bonds. Trusted Solutions.

Solenis supplies specialty chemicals for water-intensive industries, including the pulp and paper, oil and gas, chemical processing, mining, biorefining and power markets. Whether you want to increase production, develop new products, reduce costs or simply do more with less, we can help. With our innovative technologies, passionate people and unrivaled experience, Solenis is ready to deliver the solutions you need.

To learn more, contact your technical sales representative or visit us online.

All statements, information and data presented herein are believed to be accurate and reliable, but are not to be taken as a guarantee, an express warranty or an implied warranty of merchantability or fitness for a particular purpose, or representation, express or implied, for which Solenis and its subsidiaries assume legal responsibility.  
®Registered trademark, Solenis or its subsidiaries, registered in various countries  
™Trademark, Solenis or its subsidiaries, registered in various countries  
\*Trademark owned by a third party  
©2015, Solenis  
150107



Global Headquarters  
Solenis LLC  
Wilmington, Delaware  
Tel: +1 302 594 5000  
solenis.com