

# CLEANPULP<sup>SM</sup>: OUR COMMITMENT TO PULP PRODUCERS

**The right solutions for high-quality, cost-effective fiber production**



Solenis combines a customer-focused approach with best-in-class chemistries, novel monitoring and control systems, and proprietary applications techniques to help pulp mills address complex operational challenges, deliver production and quality improvements, and drive down costs and energy consumption. We call this unique approach CleanPulp<sup>SM</sup>, and it's helping us set the standard in pulp manufacturing excellence.

## Real-world Challenges. Real-world Solutions.

Mills are driven to squeeze additional production from existing assets while maintaining or even improving on quality targets. Common fiber-related issues all mills face fall into two main categories:

OPERATIONAL EFFICIENCY	FIBER QUALITY
Yield	Dirt
Unit operation throughput	Strength
Energy	Brightness
Costs	Extractives
	Chemical carryover

The magnitude of each problem can vary greatly depending on a mill's unique needs and process limitations. Because pulping operations consist of multiple, interconnected units that exert influence on one another, changes or modifications to any part of the process will have implications throughout the entire system. By considering these effects more broadly, as interdependent processes, pulp mills can implement more robust and efficient solutions.

Solenis has been helping pulp mills overcome complex challenges for decades, so we have a deep understanding of our customers' needs and expectations. We continue to make investments in advanced technologies through R&D initiatives and strategic acquisitions. As a result, Solenis has amassed a state-of-the-art portfolio of process chemistries and monitoring and control systems to address a myriad of pulp challenges. We have also invested heavily in our onsite service professionals, R&D formulators and chemists, and applications experts, who bring to bear extensive insights and knowledge to tackle even the most demanding problems.



## CleanPulp<sup>SM</sup> Commitment

Our experience in pulp manufacturing forms the foundation of our CleanPulp<sup>SM</sup> commitment, our pledge to help our customers produce the cleanest pulp possible in the most cost-efficient manner. We deliver on this promise by partnering with our customers to understand their operational and quality goals and then providing a carefully designed solution that delivers maximum value.



# Targeting the Most Critical Aspects of Pulp Manufacturing

Within the CleanPulp<sup>SM</sup> concept, four modes of chemical functionality assist in addressing the fiber-related challenges modern pulp mills are facing: Impregnation, Deresination, Washing and Deposit Control.

## Impregnation

The key to all chemical pulping is rapid and uniform impregnation of cooking liquor into the chips. Improper or insufficient impregnation can result in high levels of dirt or rejects, low strength, reduced yield, poor extractives removal, and higher alkali demand. Solenis has developed technologies that reduce the interfacial tension between the cooking liquor and the fiber pore structure to provide more uniform cooking and maximum yields.

## Deresination

Adequate deresination is required to produce high-quality pulp, as well as to optimize efficiency of specific unit operations. Depending on the magnitude of the challenge, an array of technologies are available to handle the full range of resin-related issues associated with grade specifications and operational challenges. Solenis provides state-of-the-art chemistries to maximize extraction of resins, as well as to manage and remove them from the process.

## Washing

Removal and recovery of lignin and cooking chemicals from pulp is a crucial step to minimize the impacts of fiber cleanliness and to improve mill economics. Washing operations influence make-up chemical costs, evaporator steam demand, production rate, bleaching costs and paper machine efficiency. Solenis

offers a full portfolio of high-performance defoamers and drainage aids — the result of our investment in formulators and compound development, as well as strategic acquisitions — to enable mills to produce the cleanest pulp with the highest ROI.

## Deposit Control

Deposition of organic and inorganic contaminants in the pulping process or onto the fibers can lead to dirt, loss of throughput, higher chemical usage and increased maintenance costs, all of which have severe negative impacts on quality and operational efficiencies. Solenis provides a complete portfolio of innovative products, covering the entire range of inorganic scales and organic foulants plaguing modern pulp processes. Effective treatment and management of deposition is a necessity for meeting pulp quality and production targets.



## Improve the Performance of Your Pulp Operations

A CleanPulp<sup>SM</sup> solution brings together best-in-class chemistries, novel monitoring and control systems, and proprietary applications techniques to help mills produce high-quality pulp and to demonstrate a clear ROI. Solenis can add value to every aspect of pulp production by targeting parameters that directly affect your operational efficiency and fiber quality.

TARGETED PARAMETERS	IMPREGNATION	DERESINATION	WASHING	DEPOSITION
Operational Efficiency				
Yield	•		•	
Unit Operation Throughput	•	•	•	•
Energy	•		•	•
Costs	•	•	•	•
Fiber Quality				
Dirt	•	•	•	•
Strength	•		•	
Brightness			•	•
Extractives	•	•	•	•
Chemical Carryover	•	•	•	•

**Are you interested in producing the cleanest pulp possible?** If so, please contact your local Solenis service representative to learn more about our CleanPulp<sup>SM</sup> solutions.



# 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

©2017, Solenis

170091



Global Headquarters  
Solenis LLC  
Wilmington, Delaware  
[solenis.com](http://solenis.com)