

Contaminant Control Technology

Bringing the right products and people to your papermaking



Solenis is dedicated to helping pulp and paper mills operate more efficiently and profitably. We offer a state-of-the-art product portfolio that addresses nearly every aspect of papermaking. Our highly skilled team of field sales representatives, applications engineers, and research scientists ensure our products work in your specific mill environment. By bringing together the best of both worlds — innovative chemistries and innovative people — Solenis is setting the standard in papermaking excellence.

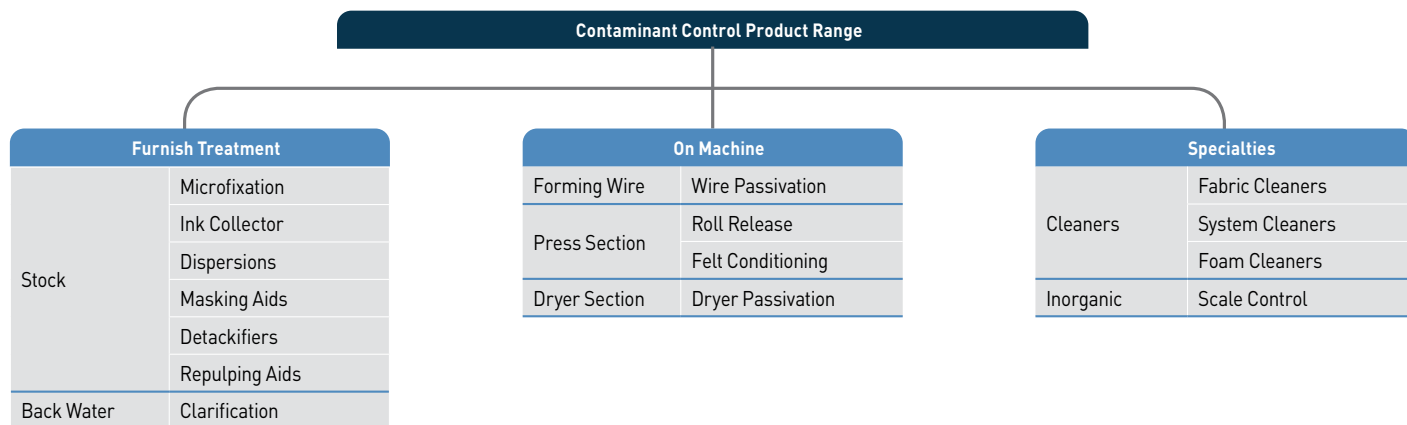
Contaminant Control Technology

From the pulp mill to the machine reel, a multitude of organic and inorganic contaminants can be found or created in the process. Left unchecked, they can lead to any number of problems, including lost production, poor sheet quality, and unscheduled shutdowns.

Solenis offers a broad range of products designed to meet the contaminant control needs of your entire papermaking operation. Product formulations are based on years of research

and development, application experience, problem diagnoses, and product evaluations.

Our applications expertise and experience with all types of machines and grades of paper, combined with the most complete and cost-effective chemical solutions on the market, ensure that you will benefit from a totally customized solution to your contaminant control needs.



Recycled Fiber Processing

Regardless of the final paper quality, stock preparation plays a decisive role in the entire production process, especially when working with recycled fibers. In the first step, pulping, it is important to ensure efficient separation of fibers and non-fiber components. This applies not only to foreign materials, such as wood, plastic or metal, but especially to printing inks, dirt particles and stickies. If these contaminants are not detached from the fiber, then they cannot be treated specifically and this in turn leads to production downtimes and quality losses.

Solenis has a complete portfolio for the detachment of non-paper components and the targeted removal of printing inks. It has over 50 years of experience and is recognized as the leading supplier in the market. The applications in stock preparation are coordinated with the following treatment steps so that complete solutions can be offered for the treatment of unwanted substances.

Organic Contaminant Control

Pitch and stickies deposit not only throughout the stock prep system and short loop, but also on forming fabrics and other machine surfaces. The deposition of pitch and stickies can lead to holes, breaks, and sheet defects.

Solenis is the industry leader in resolving problems associated with pitch and stickies deposition. Our organic and inorganic contaminant control technologies include a wide variety of dispersants, surfactants, and polymers specifically developed for detackification, microfixation, passivation, and stabilization. In particular our detackification pitch and stickies control technology is recognized industry-wide as the leading deposit control program available.

Inorganic Scale Control

When inorganic scale appears in the wet end of a paper machine or on equipment surfaces, it can lead to a number of operating problems.

Solenis has developed specific scale inhibitors to control aluminum hydroxide, barium sulfate, and calcium deposition. Our inorganic scale control programs also feature a variety of phosphate-free scale inhibitors, plus a full range of cleaning chemicals for removing existing scale.

Forming Fabric Passivation

Since its development by Solenis more than two decades ago, forming fabric passivation has become the most common method used to prevent pitch and stickies from depositing on forming fabrics around the world. Passivation of forming fabrics is achieved by spraying a water-soluble polymer directly and continuously onto the forming fabric during paper production. Within minutes of initial application, a coating that prevents contaminant adhesion is formed on the forming fabric.

Press Section Optimization

The increased use of recycled content has added to the amount of white pitch and stickies deposition on machine fabrics and rolls. These contaminants reduce water drainage in the forming section and can limit production through contaminant loading in press fabrics and on press rolls.

To help reduce these problems, Solenis has developed specially formulated products to meet the press roll and press fabric conditioning needs of your paper machine. We have structured these technologies to be an integral part of your press section optimization program.

Press Roll Contaminant Control

Contaminant buildup on press rolls can cause problems such as picking, holes, and breaks. Our state-of-the-art strategies, including surfactants, cationic polymers, and micro-emulsions, reduce these problems by virtually eliminating the deposition of pitch and stickies on roll surfaces. By maintaining clean roll surfaces, you will not only minimize doctor blade wear and cleaning-related downtime, but also improve the overall performance of your press section, which in turn may enable you to increase production.

Press Roll Adhesion Control

Poor sheet release from press rolls limits machine runnability. To maximize your machines' productivity and speed, we offer an arsenal of products specifically designed to improve sheet release and reduce adhesion to press rolls. Recorded benefits of our adhesion control technology include:

- Increased machine speed/lower draw
- Reduced holes
- Fewer press section breaks
- Reduced picking
- Decreased dusting
- Increased doctor blade life

Press Fabric Conditioning

By maintaining the permeability and absorbency of press fabrics, you can significantly reduce fabric filling, compaction, and wear. You can also increase water removal in your press section. Solenis offers a number of fabric cleaners and conditioners that improve machine productivity by enhancing the performance of press fabrics. The application of these products:

- Cleans fabrics uniformly and evenly
- Eliminates unscheduled maintenance stops
- Reduces fabric and sheet moisture profile variations
- Eliminates intermittent shutdowns to clean wet fabrics

Additionally, we offer products that continuously prevent the deposition of contaminants on press fabrics. This unique technology, which we refer to as "press fabric passivation," is used extensively world-wide and has been pioneered by Solenis.

Dryer Section Passivation*

With the addition of our dryer section passivation technology, we can tackle all contaminant control challenges across the entire pulp and papermaking process. This technology improves the total efficiency of your dryer operation, protecting every surface in your dryer section that comes in contact with the sheet, reducing the deposition of contaminants, and minimizing sheet picking and dusting. Designed for flexibility, this technology can integrate:

- A continuous application of chemical additives on dryer cylinders and dryer fabrics
- Specially designed application equipment, including traversing atomizing spray nozzles and their associated pump unit and control station

Dryer Cylinder Contaminant Control

Smoother paper, reduced fiber rising and fewer breaks are just some of the benefits you will realize when you treat your dryer cylinders with our dryer section passivation technology. The chemistry behind this technology not only prevents contaminant adhesion but also helps lubricate the doctor blades, reducing friction between the blade and the dryer cylinder, thereby decreasing doctor blade and cylinder wear. Other benefits include:

- Increased paper production
- Improved sheet quality
- Reduced steam consumption
- Increased safety through reduced use of solvents

Dryer Fabric Contaminant Control

When deposits form on dryer fabrics, they frequently transfer to the dryer fabric rolls. Over time, the buildup forms thick deposits. Deposits of this nature not only impair moisture removal, but also can transfer back to the sheet and cause visible spots.

Our dryer section passivation technology establishes a protective layer that prevents contaminants from adhering to the fabric surface. By preventing the deposition of contaminants on the dryer fabrics, it minimises the need for you to stop and clean your fabrics when production has slowed due to impaired moisture removal or when your sheet moisture profile can no longer be controlled.

Boilouts

To help make your scheduled machine boilouts and cleaning even more effective, Solenis has developed an extensive portfolio of products which are unmatched in their effectiveness at removing microbiological, organic and inorganic deposits through-out the paper making process.

Fabric Cleaners

Removing contaminant buildup on your forming fabrics, press fabrics, and dryer fabrics will greatly improve the overall operating efficiency of your machine. Whether you need to clean your fabrics intermittently or during a scheduled shutdown, Solenis has a solution. Our fabric cleaners are specially formulated to break down the contaminant structure, thereby making the deposit easier to rinse away. We also offer products that are based on a variety of chemistries and that will address even the most tenacious of deposits.

Foam Cleaners

Whether used during scheduled maintenance stops or other machine shutdowns, our foam cleaners are highly effective at removing stubborn organic deposits and inorganic scale from surfaces not readily cleaned during regular system cleaning. All of our foam cleaners are specially formulated to produce stable foam that clings to the surface to be cleaned.



Advanced solutions for your toughest challenges.

Solenis is a global leader in specialty chemicals for water-intensive industries. With an average of 20 years expertise, our team is the industry's most knowledgeable. That's how we solve your toughest operational and sustainability challenges—whether you're in the pulp, paper, oil and gas, petroleum refining, chemical processing, mining, biorefining, power or municipal market. Combining the right people, the right experience and the right technology, we're built to deliver value.



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