

# Tissue 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.

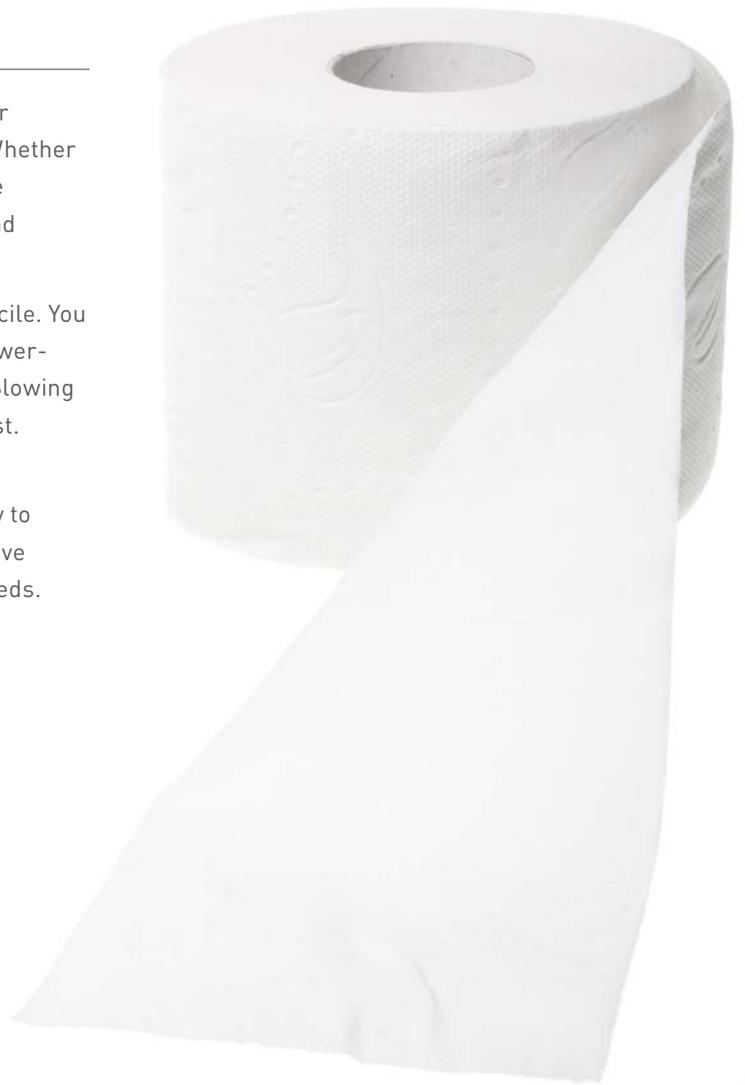
## Tissue Technology

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Tissue makers face consumer demands every day — demands for softer, stronger and more absorbent products at no extra cost. Whether producing premium brands or value brands for consumers or the away-from-home market, the need to improve product quality and machine productivity never ends.

Sometimes these conflicting demands seem impossible to reconcile. You can reduce cost by increasing machine speed and substituting lower-cost fibers, but this can come at the expense of product quality. Slowing down can improve product softness but can result in a higher cost.

As the world leader of creping technology to the tissue industry, Solenis understands that one product or approach does not apply to all situations. We continue to develop and introduce new innovative technologies to help our customers meet their ever-changing needs.



## Creping Adhesive Technology

Our technology controls adhesion between the tissue and the Yankee cylinder under variable operating conditions, including the extremes of high or low moisture and high temperatures.

Key benefits include:

- Surface protection for the cylinder
- Increased production speed
- Improved creping uniformity
- Improved doctor blade life
- Improved heat transfer to reduce energy costs
- Improved softness and hand-feel

New patented fully crosslinked creping adhesives open up the operating window on the machine, allowing improved machine efficiencies and reduced energy consumption on any Yankee surface.

## Coating Modifier Technology

To control coating development and rheology — its rewettability and uniformity — our technology modifies the overall coating performance window. Key benefits include:

- Controlled adhesion
- Bulk/caliper improvements
- Increased stretch
- Coating uniformity

## Yankee Cylinder Conditioning Technology

You can extend the operational life of the Yankee cylinder with our specifically developed conditioning products that provide exceptional protection. Other key benefits are:

- Longer run times and higher production potential
- Overall improvement of the coating film formation
- Prolonged doctor blade life
- Easier start-up after regrinds

## Release Technology

This technology provides you with a consistent and uniform coating film to aid in the release of the sheet from the Yankee cylinder. Benefits include:

- Increased doctor blade life
- Control of coating buildup
- Improved ply bonding in converting
- Yankee cylinder edge control

New multifunctional release agents change the technology curve to add additional sheet properties, such as improved softness or increased absorbency.

## Debonder and Softener Technology

These products are specifically formulated to ensure and enhance surface smoothness, bulk softness, and hand-feel of tissue products. Other benefits are:

- Increased sheet flexibility
- Enhanced creping efficiency

Through research and application experience in all stages of the tissue production process, we ensure that our tissue technology meets all of your expectations. Superior performance has resulted in:

- Uniform adhesion
- High wet tack
- Cylinder surface protection
- Longer doctor blade life
- Improved heat transfer
- Less sheet transfer problems
- Increased softness and bulk
- Improved machine efficiency

## Converting Technologies

Solenis has a range of topical treatments designed to help customers enhance the quality of their base sheet in a cost-effective manner. The technologies, which are added in converting via approved applications, can provide enhanced surface properties and softness improvements.

## Tissue Technology Before the Cylinder

Chemicals in other areas also affect tissue quality. With our mill-wide understanding of systems and applications, we can recommend a complete program with a broad array of technology to improve tissue and runnability. Technologies included are:

- Wet strength
- Dry strength
- Microbiological control
- Contaminant control
- Foam control
- Boiler water treatment/internal cylinder treatment
- Cooling water treatment
- Retention and drainage
- Fines control

## Total Tissue Application Systems

Having the right products is only part of your complete solution. Feed system design is also critical. To ensure total optimization of our tissue technology, Solenis develops application-specific feed systems using the best-available technology for each region, consisting of three main areas:

- DCS compatible, standalone metering and sensing modules for each chemical application
- Dosage control programs to seamlessly adjust component flowrates as machines speeds vary
- Windows™-based data collection software and remote sensing where applicable





## 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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