



AkzoNobel



**Compozil, the revolutionary
retention system.
Inspired by a love of paper.**

eka



Over the years Eka Chemicals has developed chemicals, concepts and tools that make processes run more efficiently – upgrading quality and saving you time and money. What’s more, each of our patented products of the last twenty years has been more eco-efficient than the previous one. Quite simply, we are on a mission to save fiber, energy and water.

One eco-efficient concept we are particularly proud of is Compozil.

Flexibility inspired by your mill.

We have made your business our business. And that is why we are so eager to suggest Compozil as a way of improving your operations.

As any papermaker knows, effective retention is the key to optimized runnability and substantial energy and raw materials savings. But it also allows you to develop better quality paper and, perhaps even more importantly, new competitive products. And, as an added benefit, it can increase your sustainability.

More possibilities than ever!

A groundbreaking innovation in the early 80s, Compozil is still the most advanced and flexible program for retention, dewatering and dry strength on the market.

Over the years, we have continued to develop the systems with more advanced silica nanoparticle technology, combined with new polymers and anionic trash catchers (fixatives). Today, the portfolio also includes dual polymer systems.

We have tailor-made specific nanoparticles for the polymers we provide, and we produce the polymers ourselves, which allows us to deliver paper-grade specific solutions. A combination that makes it possible to design a unique system for your particular process!

Quality, productivity, sustainability ...

Compozil is used in the production of more than 50 million tons of paper and board. And the world’s largest paper machines are already benefiting from Compozil. We would like to help you boost your business prospects as well.

Abilities inspired by your machines.

Very reactive in any set combination, Compozil can speed up machines by several tens of meters per minute. At the same time, web breaks are reduced, which of course minimizes downtime and further increases your production.

Our edge is your edge

These benefits derive not only from our state-of-the-art chemicals, but also from our state-of-the-art people. As today’s preferred supplier of chemicals to the pulp and paper industry, we have worked on more machines and paper grades than any other. Deep knowledge, practical experience and close interaction with customers and operators throughout the world give us an application edge, whatever kind of paper you produce. This, in turn, gives you a competitive edge.

Close cooperation

In short, by working side by side with you, we get to know your machines, products and processes intimately. This means we can design Compozil accordingly and apply the system safely and effectively, which can improve your productivity tremendously.

Through close cooperation with our experts, you can also use Compozil to develop the quality of your paper and board even further.



Chemicals inspired by your paper.

The Compozil systems are based on a wide range of tailored colloidal silica nanoparticles, polymers and ATCs that, together with other components, can be used for virtually all types of paper grades.

Regardless of the grade, improved retention improves machine runnability and efficiency. But especially for fine paper and packaging, the Compozil systems create dramatic effects.

Eka NP

The proprietary nanoparticles Eka NP form the basis of successful Compozil systems used in paper mills all over the world. These particles have a superior performance in polymer- or starch-based retention systems, acid or alkaline pH, and with any grade.

Eka NP 2180

Expect substantial performance improvements from the next generation of patented NP technology. Versatile and very efficient, Eka NP 2180 is designed to interact more strongly with polymer as well as polymer/starch systems than other technologies. Suitable for all paper grades, machine systems, pH levels and retention systems, it reduces chemical addition by up to 40 percent.

And of course, increased retention control enhances runnability, formation, quality and flexibility. Eka NP 2180 has proven to deliver up to a 10 percent production increase beyond what other technologies can provide.

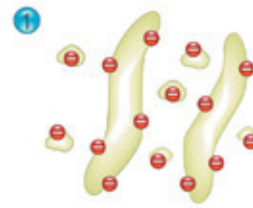
Compozil Fx

The Compozil Fx systems were developed to meet the needs of high-speed machines producing fine paper with high filler levels.

With the addition of a unique anionic polyacrylamide, it is possible to maximize filler content while maintaining formation through controlled drainage. Higher filler content also means that you can maintain high quality grades using less fiber.

By optimizing the ratio of the components, you achieve brighter, stronger and more consistent paper. At the same time, your total cost for chemicals goes down, due to considerably reduced usage.

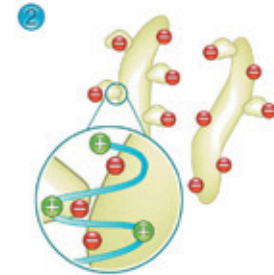
Compozil Retention Mechanism



1 Filler/Fines dispersed in furnish.



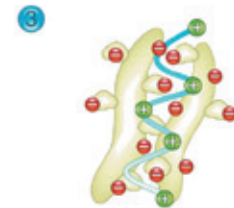
2 Addition of Eka ATC – high charged, low molecular weight donor.



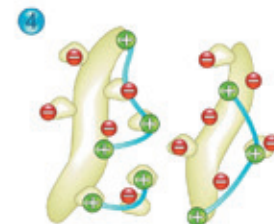
3 Charged neutralized/coagulation of fines.



4 Addition of Eka PL – low charged, high molecular weight polymer.



5 Bridging flocculation occurs.



6 Dispersion due to shear forces, e.g. pumps or screens (where applicable).



7 Addition of Eka NP and Eka PLx after shear forces.



8 Formation of small, dense flocs yields improved formation.

Solutions inspired by your work.

Not surprisingly, Compozil can make everyday work a lot easier and more fulfilling as processes are smoother and trouble-free. And no matter where you are, our experts are always close by to support you.

To help you meet the demands and challenges of the market, we are also constantly developing our technology. For instance, we are now investigating the potential of filler levels above 35 percent.

Folding box board:

3 ply Fourdrinier
 Grammage: 180–350 g/m²
 Furnish: BCTMP, coated broke, bleached sulphate
 Machine speed: 400 m/min

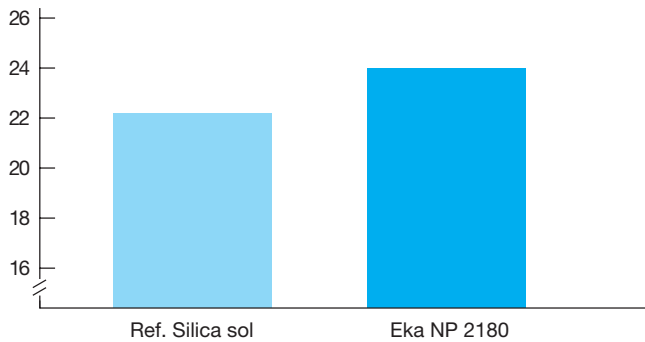
Target issues:

Increased production
 Reduced ref. silica sol dosage

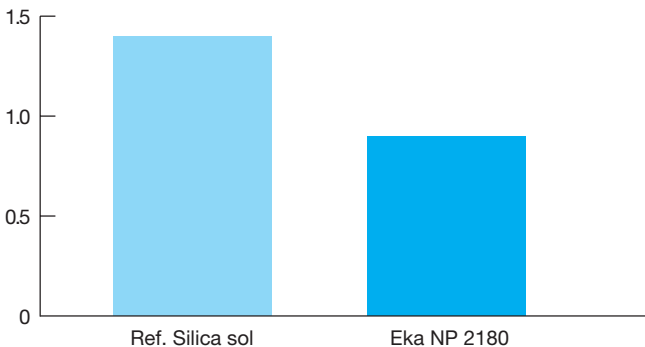
Achievements:

Increased production by 7%
 Reduced ref. silica sol dosage by 35%

Production t/hr



Addition rate kg/t



At work today

We are considered a preferred supplier at machine start-ups. Currently, 30 of the world's top fine-paper machines are using Compozil with great results.

Uncoated fine paper:

Fourdrinier
 Grammage: up to 180 g/m²
 Furnish: HWDK/SWDK/DIP
 Filler: PCC
 Machine speed: 700 m/min

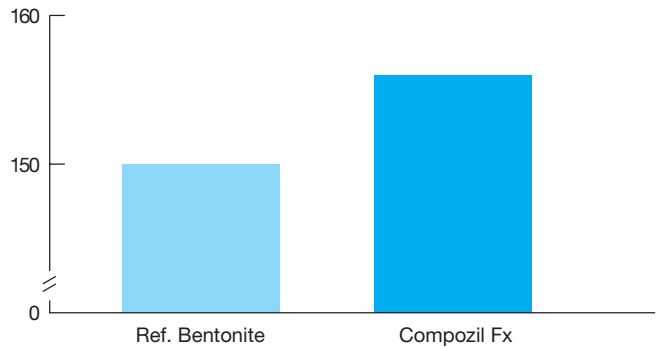
Target issues:

Better formation
 Lower cost
 Increased machine speed
 Replace Bentonite

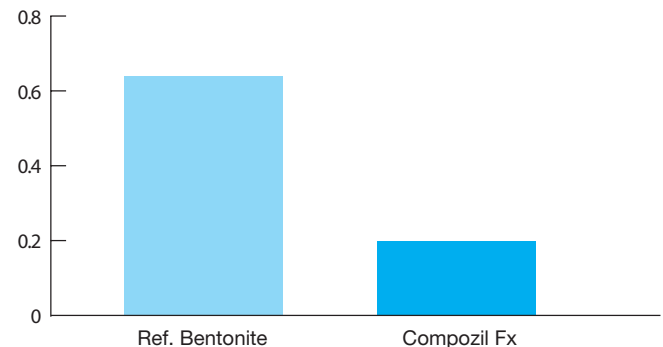
Achievements:

Increased production by 4%
 Reduced polymer addition

Production t/day



Addition rate kg/t





Let's discuss what inspires you!

Your paper, machines, water, raw materials, dosage points and other significant conditions at the mill decide which products are eventually chosen.

Each Compozil system consists of two to five components, the core being nanoparticles and/or polymers and anionic trash catchers, including:

Eka NP Series

Colloidal silica nanoparticle products, whose properties allow maximum performance and efficiency in polymer- or starch-based retention systems, acid or alkaline pH, and with any grade.

Eka PL Series

A complete line of polyacrylamides available as a powder, emulsion or dispersion, in a wide range of charge densities and molecular weights. Includes unique products developed for specialized performance and specifically for enhanced interaction with Eka NP in Compozil systems.

Eka ATC Series

Anionic trash catchers (fixatives), organic or inorganic, for charge control and fixation. In addition, a variety of new products and chemistries that provide enhanced colloidal retention, improved wood pitch, white pitch and stickies control, and better ash retention.

Eka DS Series

A broad range of dry-strength polymers used to develop strength properties in paper and board.

Eka Chemicals, with around 2,570 employees in 28 countries, is a business unit within AkzoNobel. Eka Chemicals is a leading supplier of bleaching chemicals, paper chemicals and systems to the pulp and paper industry throughout the world, and supplies certain specialty chemicals to the pharmaceuticals industry, water treatment, the electronics industry etc.

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