

KemForm | Retention & Drainage Aid

Kemira

What if you could

- Selectively control the retention of fiber, filler, or fines to achieve desired sheet quality
- Significantly increase ash retention 2 to 3 percentage points for increased fiber substitution savings
- Increase ash retention and improve formation
- Increase ash load and not compromise strength
- Increase machine speed by as much as 10%
- Improve your return on investment (ROI)

You get an innovative concept

The new patent pending Kemira KemForm Retention and Drainage Aid Concepts are brand new retention and drainage platforms that allows the papermaker to improve formation, retention and drainage. The revolutionary retention and drainage programs allow for increased ash retention while maintaining sheet strength, allowing for increased efficiency of all process additives. These improvements have been observed not only in high filled wood and non wood containing grades such as fine paper and super calendared sheets (SCA), but also in low filled newsprint grades and unbleached packaging grades. The new platforms are multi-component and are comprised of new cationic and anionic micropolymer technologies developed and engineered to work synergistically with Kemira's current retention and drainage product offerings.

You get the latest technology

Kemira's KemForm Retention and Drainage Concepts were designed to address tomorrows papermaking today! The KemForm Concept enables a floc and subsequent sheet structure to be created that maximizes drainage in the former without compromising pressing efficiency. This technology is very efficient for retention of both calcium carbonates and kaolins as papermakers are increasing filler loadings.



You get an improvement over today's processes

The ability to control filler performance and fines retention is vital in the development of both filled and non-filled grades, respectively. During paper production, a narrow balance exists between achieving optimal retention, maximized runnability and desired sheet formation. In today's papermaking trend, the complexity increases as paper and paper board contain higher ash loads produced on higher speed high-shear paper machines. High molecular weight-long chain polymers and poly-acrylamides (PAM's), are efficient for gross retention. PAM's generally require the development of a larger floc via a bridging mechanism to obtain sufficient retention of fines and filler. In the presence of filler, PAM's can agglomerate filler particles. By effectively increasing the average particle size of the mineral, and changing the filler distribution within the sheet, both opacity and formation can be adversely affected, as well as other physical properties. In addition, a substantial level of "bound" water is present within the floc often hindering the pressing efficiency of the sheet. Higher dewatering rates may be observed in the forming section of the paper machine, but the net water removal after the press section may be reduced. The result can be slower machine speeds or higher steam demands. Runnability can also be compromised if the bound water becomes excessive resulting in sheet crushing and picking. In manufacturing processes that utilize high efficiency

presses such as an extended nip press (ENP), this loss in pressing efficiency can be very prohibitive. Conversely, high-charged low molecular weight polymers allow for fixation or patch retention of fillers, fines and detrimental substances. Although they can improve drainage in some systems through soluble charge control, they are limited in their ability to maintain retention because of the lack of floc structure.

You get a custom retention & drainage program

Kemira KemForm S
 Kemira KemForm B
 Kemira KemForm P

Kemira Kemform retention and drainage concepts are specifically engineered to address tomorrow's papermaking needs today.

You get a competitive advantage

	Kemira KemForm	Competitor A Inorganic & PAM	Competitor B Organic Micropolymer	Competitor C Organic Micropolymer	Competitor D Organic Micropolymer
Used as single component	X			X	
Typical number of components	1 to 3	2	2	1 to 3	4
High filler retention	X		medium	X	medium
High stability to shear	X	medium	low	medium	X
Cross-linked polymer	X	X	X	X	X
Type	cationic or anionic	cationic	anionic	anionic	anionic
Not affected by pH	X				
Direct microfloculation possible as stand alone	X			X	
No oil, VOC or inversion	X	oil base	oil base	oil base	developing water base
Minimal feed equipment	X				