

KYMENE™ WET-STRENGTH RESIN INNOVATIONS

**Bringing the right products and people
to your papermaking**



EMEA Portfolio

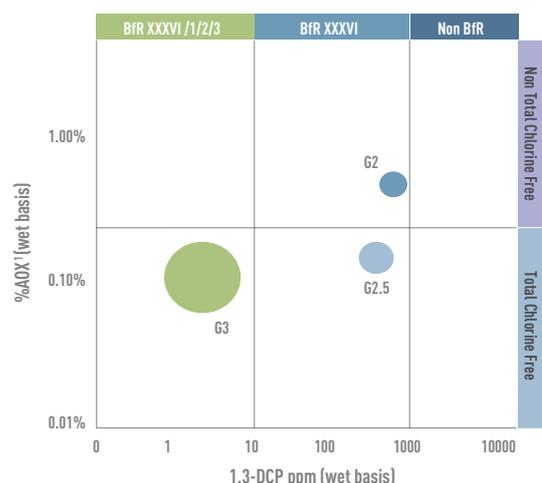
- Increased wet strength
- Reduced cost
- Increased efficiency
- Improved functionality
- Improved regulatory compliance

Technology Overview

Kymene™ wet-strength additives, based on polyamide-epichlorohydrin (PAE) resin chemistry, help papermakers improve the wet strength of grades intended primarily for the consumer market. These grades include tissue (facial, kitchen towel, wipers, napkins and tableware), packaging (liquid packaging, aseptic container, carrier board, and other forms of food packaging), and specialty (tea bag, coffee filter, labels, currency, laminating grades, etc.).

Designed to be used at neutral-to-alkaline pH, PAE resins have a high level of wet-strength permanence, help improve machine efficiency and do not adversely affect paper absorbency as do some other chemistries.

Solenis has developed methods, including post-synthesis technologies, to modify the basic chemistry of Kymene wet-strength resins



EMEA LINE OF KYMENE WET-STRENGTH RESINS						
Generation	Base Resin	Total Solids	Efficiency	DCP	MCPD	Total AOX
G2	Kymene 625	25%	Standard	999 ppm	350 ppm	0.57%
G2	Kymene 25X-Cel	25%	High	999 ppm	350 ppm	0.57%
G2	Kymene 920	20%	High	999 ppm	250 ppm	0.50%
G2	Kymene XRV20	20%	Standard-High	500 ppm	200 ppm	0.45%
G2.5	Kymene 217LX	22%	High	700 ppm	700 ppm	0.20%
G2.5	Kymene LHP24	24%	High	600 ppm	600 ppm	0.20%
G2.5	Kymene LXV25	25%	High	500 ppm	500 ppm	0.20%
G3	Kymene GHP20S	20%	Very High	50 ppm	25 ppm	0.10%
G3	Kymene GHP20	20%	Very High	10 ppm	10 ppm	0.10%
G3	Kymene G3X-Cel	16%	Standard	5 ppm	6 ppm	0.12%

to make them stronger-performing while reducing the by-products 1,3-dichloropropanol (1,3-DCP) and 3-monochloropropan-1,2-diol (3-MCPD), as well as aminochlorohydrin (ACH) and polymer-bound CPD (PB-CPD) for our customers' paper and board regulatory compliance needs.

Compliance and Sustainability

Solenis' wet-strength resins can be supplied in a variety of product configurations to accommodate stringent European compliance and regulatory standards. We offer solutions that help mills comply with environmental labeling established by Nordic Ecolabel and recommendations issued by the German Federal Institute of Risk Assessment (Bundesinstitut für Risikobewertung, or BfR). And we can deliver products to papermakers with very specific manufacturing needs, such as total chlorine-free grades with very low-OX-in-paper requirements.

¹ Adsorbable organic halogen

FEATURE	BENEFIT
A legacy of innovation	The most complete line of G1, G2 and G3 wet-strength resins on the market, making it possible to address a full range of customer compliance needs while balancing cost-in-use
Advanced chemical techniques and manufacturing processes	Introduction of high-solids, high-efficiency resins with ever-increasing levels of azetidinium (AZE) functionality
Biodehalogenation and membrane separation technologies	Stronger-performing resins with reduced levels of 1,3-DCP and 3-MCPD, as well as aminochlorohydrin and polymer-bound CPD
Extensive manufacturing footprint	Ability to provide wet-strength resins—efficiently and cost-effectively—to any mill, anywhere in the world
Dedicated R&D organization and wet-strength resin expertise	Commitment to deliver the next generation of wet-strength resins that increase solids, improve functionality and remain far ahead of all regulatory compliance issues

Supply Chain

Solenis operates five manufacturing facilities for wet-strength resin production in EMEA. This puts us close to any European customer, reducing freight distances and, as a result, freight costs. It also gives us the necessary manufacturing backup to ensure that we can serve our customers even if one facility encounters a production problem.

More Information

To learn more, contact your technical sales representative or visit us online.

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