

Press Release

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DSM Engineering Plastics
2 Havelock Road, #04-01
059763 Singapore

www.dsm.com

DSM makes breakthrough in polyamide blown film processing with Akulon XS

Royal DSM, the global Life Sciences and Materials Sciences company, says the potential for polyamide 6 in blown film for flexible food packaging is further enhanced with the introduction of Akulon® XS. Thanks to its improved crystallisation properties, Akulon XS has an extended processing window, providing new opportunities in designing co-extruded multi-layer as well as monolayer film structures. Processors notice significant improvements in production when using the new Akulon XS.

As awareness of the need for food waste reduction and shelf life extension grows, demand for barrier films for flexible food packaging continues to increase. Many barrier films are coextruded on blown film lines, and structures with seven, nine and even 11 layers are now quite common. This technology provides a cost-effective way of combining various functionalities, such as barrier, printability, sealability and impact resistance.

Polyamide 6 (PA6) is a very interesting option for use in such films, owing to its good barrier properties and its mechanical strength. The high crystallization rate of polyamide 6, however, can limit its processing window. Processors have to either compromise on productivity, or obtain improved processability by blending the PA6 with special, and more expensive, amorphous polyamides or polyamide copolymers. This reduces the cost-effectiveness of the film.

Akulon XS from DSM resolves the issue. It crystallizes much slower in the film bubble than conventional PA6—matching the crystallization rate of other material layers. This creates a more stable bubble and gives processors more leeway in their processing conditions. The film is also more stretchable, so less force is needed to achieve the same blow-up ratio (BUR), or the same force can be used to produce a bubble with a BUR between 7 and 10 % higher. There are also fewer wrinkles in the flat film.

Even though slower crystallization creates larger crystals that might be expected to produce a less clear film, tests on full-scale production lines have shown that there is virtually no discernible difference in the optical properties of films made with a benchmark film-grade polyamide and Akulon XS. In fact, all properties of the film in use are the same as in film made with standard PA6.

DSM provides Akulon XS customers with a special service from its technical experts to maximize the advantages of this innovative new material. The company is offering support to optimize film structure designs, based on its DSM Film Structure Calculation Model. This model predicts the barrier properties of different film structures, even after retort processing, and enables blown film producers to find the optimal layer structure and processing conditions for Akulon XS.

Akulon XS is making it easier and more cost effective for processors to make polyamide 6 blown films for flexible food packaging, leveraging the unique barrier and mechanical properties of polyamide 6.

More information can be found at www.dsm.com/packaging-graphic-arts.

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Royal DSM is a global science-based company active in health, nutrition and materials. By connecting its unique competences in Life Sciences and Materials Sciences DSM is driving economic prosperity, environmental progress and social advances to create sustainable value for all stakeholders. DSM delivers innovative solutions that nourish, protect and improve performance in global markets such as food and dietary supplements, personal care, feed, pharmaceuticals, medical devices, automotive, paints, electrical and electronics, life protection, alternative energy and bio-based materials. DSM's 23,500 employees deliver annual net sales of about €9 billion. The company is listed on NYSE Euronext. More information can be found at www.dsm.com.

For more information:

Mirelle van der Kreeft
DSM Engineering Plastics
Tel.: +31 46 477 3051
Fax: +31 46 477 3959
E-mail: Mirelle.Kreeft-van-der@dsm.com

Anouk Luykx
EMG
Tel.: +31 164 317 017
Fax: +31 164 317 039
E-mail: aluykx@emg-pr.com

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