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## Breakthrough high-loft, ultra soft nonwovens from ExxonMobil-Reifenhäuser Reicofil collaboration

A new breakthrough solution to produce nonwoven fabrics with lofty thickness, ultra-cushiony cotton-like softness, and a silk-like smooth touch has arrived. A collaboration between ExxonMobil and Reifenhäuser Reicofil, these high-loft, ultra-soft nonwovens can be produced affordably in one step from pellet to nonwoven via high-speed spunbond process. It is ideal for use in premium diapers, pant-type diapers, feminine care and adult incontinence products.

### The challenge

Lighter, softer, more comfortable on contact with the skin. Consumer expectations are pushing the bar higher and higher for nonwovens for baby and adult diapers, feminine care products, back sheets and medical fabrics.

Conventional polymer and spunbond technologies produce nonwovens that are typically flat, thin and paper-like. A paradigm shift is needed to make the leap to the next-generation nonwoven.

ExxonMobil stepped up to the challenge, roping in the support of its long-time partner, Reifenhäuser Reicofil, a leading global provider of complete nonwoven, meltblown and composite lines.

### The solution

The perfect nonwoven starts with the right high performance raw materials, through every step of the manufacturing process to the end product.

By using two Achieve™ Advanced PP and ExxonMobil™ PP grades together with Vistamaxx™ performance polymers, crimping of the fibers occurs during the spinning and laydown process and is maintained during the bonding calendaring stage to achieve a high-loft, ultra-soft nonwoven.

“To arrive at our recommended formulation, more than 100 tests were done to model the best performance, balancing the different properties of the fabric,” revealed Paul Rollin, ExxonMobil’s global nonwovens team lead.

### Key benefits



#### Softness

Tailorable feel – ultra soft cottony or silky smooth touch



#### Thickness

Tailorable lofty thickness



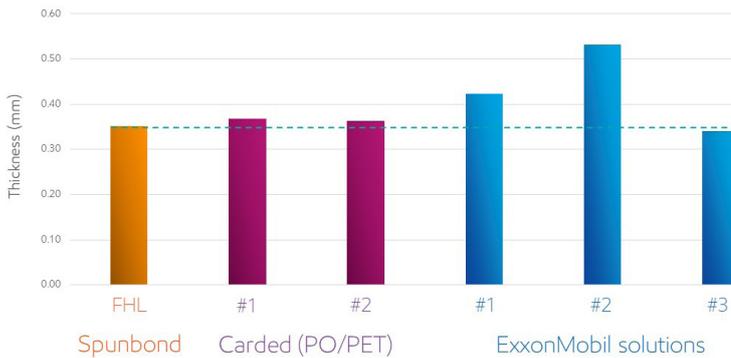
#### Easy processability

Processes easily on standard bi-component (BiCo) spunbond lines

Offering the thickness required for cushiony softness, the nonwoven fabric is as resilient as it is lofty, while delivering good drapability, uniformity for consistent products and low lint for surface stability.

By adjusting the formulation, nonwovens can be tailored to meet the needs of different hygiene product components such as the bellyband, back sheet and top sheet used in baby diapers, feminine care, and adult incontinence products.

### High-loft thickness comparison: ExxonMobil solutions vs industry spunbond solutions



Basis weight: 19-20 g/m<sup>2</sup>

Test method: ExxonMobil test methods

“We can also tailor the solution to regional needs and preferences,” added Paul. “For example, consumers in Americas and Europe seem to prefer a dry, cottony touch while those in Asia prefer a smooth, silky touch.”

The high-loft formulation works hand-in-hand with the Reicofil BiCo technology developed by Reifenhäuser Reicofil. “This technology enables the production of high-loft, ultra-soft nonwovens at high speed in one step from pellet to nonwoven,” says Tristan Kretschmann, R&D Manager at Reifenhäuser Reicofil.

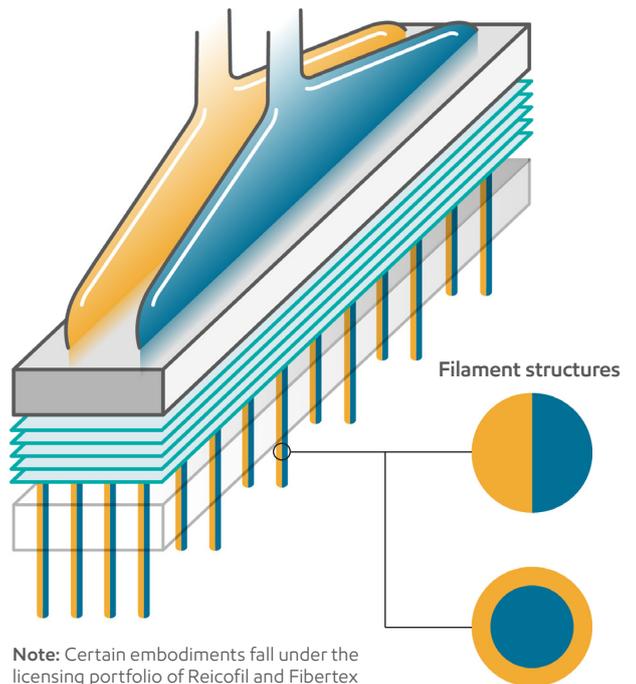
“With this technology, filaments of 2 different raw materials are produced, for example, in a side-by-side structure. The fibers crimp before laydown and are subsequently bonded using hot air or a special embossing calendar,” he added.

### The result

“Working collaboratively with Reicofil has resulted in a new benchmark for high-loft, ultra-soft nonwovens to meet growing market demand globally, particularly in Asia Pacific,” said Olivier Lorge, Global Market Manager, Polypropylene, Vistamaxx and Adhesions Business, ExxonMobil. “This solution will unlock business opportunities for ExxonMobil customers across the value chain.”

Brand owners and manufacturers of diapers and feminine care products can upgrade their products considerably by using such high-loft, ultra-soft spunbond nonwovens to differentiate their products.

The new solution is also cost competitive. The key advantages of spunbond technology are higher throughput and productivity which will lower production cost. “Delivering enhanced performance, this solution is an ideal and cost-efficient replacement for carded fabrics allowing brand owners and converters to create innovative solutions to meet different application needs,” said Tristan, adding that all the developed recipes are available within the licensed portfolio of Fibertex and Reicofil.



**Note:** Certain embodiments fall under the licensing portfolio of Reicofil and Fibertex Personal Care.



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