

ACTGreen® Barrier Coatings for paper and board converters

Packaging is not only necessary to protect and transport goods, but also an important environmental issue. The increasing use of packaging combined with low reuse and recycling rates is hindering the development of a low-carbon circular economy. Packaging is "non-recyclable" if it cannot be collected separately or poses challenges to modern sorting and recycling processes.

There is also a growing consumer demand for environmentally friendly packaging solutions. In addition, legislation in Europe and around the world is adapting to the challenges and driving regulation towards a more sustainable future.

Packaging manufacturers are not the only ones who have to face up to the new requirements. Most brand owners have already begun to commit to a more sustainable packaging future. Almost all brands have set targets to increase recycling and reuse and to reduce the use of plastics in packaging. Paper-based packaging is seen as a viable solution to achieve the required recycling targets.

This can involve a complete switch from plastic to paper-based packaging, or the choice of a more environmentally friendly paper coating, as in the case of barrier papers.

For packaging that must provide a barrier effect, solutions such as conventional PE, silicone or fluorochemical barriers are still widely used in the industry. However, due to their poor recyclability, these materials represent a major drawback in terms of sustainability and are subject to change.

SOME IMPORTANT REGULATIONS TO BE CONSIDERED:

EU Single-Use Plastics Directive (SUPD) / Commission guideline on single-use plastic products:

The aim is to prevent and reduce the impact of certain plastic products on the environment and to promote the transition to a circular economy. It introduces several different measures for single-use plastic products, such as types of food and beverage packaging. The directive includes a ban on polystyrene packaging and certain plastic items (e.g. straws) and restricts the use of plastic lining in paper-based packaging.

Extended producer responsibility (EPR) / plastic taxes:

Various countries are planning to introduce or have already introduced legislation requiring packaging producers to take responsibility for the environmental impact of the packaging they supply by charging EPR fees for the collection and disposal of packaging once it becomes waste.

Packaging and Packaging Waste Regulation (PPWR):

The aim of the PPWR is to reduce packaging waste and promote recyclability or reuse by setting specific targets. The current draft contains specific targets for recycling, but also quotas for the use of recycled materials in packaging. This would mean a ban on certain materials or multilayer structures that cannot meet these targets. Paper-based packaging is advantageous as recycling facilities are already widespread and the recycling rate is already significantly higher compared to plastic packaging.

In short, legislators all over the world are working on laws and regulations to make packaging more sustainable. The examples above are just a small insight into the latest developments and more are going to follow.



CHALLENGE:

New solutions and alternatives for currently established packaging products are associated with various challenges.

- **Unknown packaging requirements:** Often, the exact requirements for the function of a packaging are unknown, leading to over-specification which makes it difficult to find a more sustainable solution.
- **Paper behaves differently:** When switching from plastic to paper-based solutions, a higher volume of material might be used to compensate for losses in tensile strength and other properties.
- **Adjustments on filling and packaging lines:** Filling and packaging lines have to be adapted and often achieve lower speeds when converting to paper-based solutions.
- **Availability of coating capabilities:** Sustainable solutions often require adjustments to equipment or investments in new coating lines – competing with established processes such as PE extrusion lines.
- **There is no “one-fits-all” solution:** To find the most suitable coating it is necessary to look at factors like the packed product, packaging type, shelf life or the application process.

Generally said, alternatives are needed that offer the right functionality for the desired packaging application (with barrier effect), i.e. protect the filling goods, are safe for consumers, run efficiently on the production lines, and at the same time reduce the ecological footprint of the packaging.

SOLUTION:

The search for more sustainable alternatives to conventional solutions has also led to a significant increase in dispersion coatings in recent years. In particular, the highly regulated food packaging industry requires in-depth knowledge of the requirements for different food types and applications to provide safe packaging for consumers and the environment.

True to the motto "Packed with Expertise", ACTEGA has many years of experience in the packaging industry, including for sensitive products, and provides a dedicated barrier team.

As part of ACTGreen® Barrier Coatings, the company combines its expertise in the formulation of coatings with the innovative YUNICO® technology. This technology makes it possible to extend the application range of barrier coatings through a unique dispersion production process. This enables the development of customized coatings for different applications and end uses with unmatched regulatory safety – for a new generation of barrier applications.

„Our innovative solutions help customers and brand owners to create value on the way to a circular economy.“



Wilke Föllscher
Expert for Barrier Coatings, P&B



BENEFITS AT A GLANCE:

Water-based solutions with high regulatory safety

Barrier properties against various substances (e.g. water, water vapor, oil and fat) in combination with heat sealability – customizable through our proprietary coating technologies

Proven recyclability – all coatings ensure a high recycling rate of up to 95% of the packaging material used.

Solutions can be customized for various coating and printing applications, e.g.

- Size coating
- Blade and rod coating
- Curtain coating
- Smooth Roller Coating
- Flexo and Rotogravure Printing

Coatings can be overprinted

"Recommending the right barrier coating solution requires information and knowledge. We rely on close cooperation with our customers to achieve the best results."

Wilke Föllscher

Expert for Barrier Coatings, P&B



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