

Kuraray

Interview with Heiko Mack, Head of Poval Business

Topic: "Recyclable packaging with Exceval"

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"We create innovative packaging materials with barrier coatings to fight plastic waste"

[Unterzeile]

By 2030, all plastic packaging in the EU should be reusable or recyclable. Environmentally friendly packaging with barrier coatings such as EXCEVAL™ make this goal achievable. An interview with Heiko Mack, Head of Poval Business at Kuraray

[Vorspann]

Hattersheim/Berlin, April 2019. Plastic waste is putting an increasing strain on the environment. The use of plastic packaging for food and other products plays a big role in that. To reduce the associated waste, the aim is to ensure that by 2030 all plastic packaging in the European Union is reusable or recyclable. Heiko Mack heads the Polyvinyl Alcohol (PVA) business unit at Kuraray, one of the world's leading speciality chemical producers. In this interview at the Specialty Papers Conference in Berlin, he explains how EXCEVAL™ barrier coatings can contribute to environmentally friendly packaging solutions.

[Text]

Mr. Mack, by 2030 all packaging in the European Union (EU) should be reusable or recyclable. Is that achievable?

Heiko Mack: It has to be! The rising strain on the environment caused by plastic packaging is a major challenge at present. Therefore, the circular economy, which the European Union launched with an action plan back in 2015, is an important step.

What basic conditions need to be met?

Heiko Mack: The packaging industry needs to find alternatives to plastic. Paper-based packaging is one option. Using high-performance barrier coatings such as our EXCEVAL™ copolymer, it is possible to create innovative packaging materials that are superior to plastics in many ways.

How does that work?

Heiko Mack: EXCEVAL™ is an aqueous solution that is used to coat packaging materials. That makes them impermeable to grease and oil and acts as an effective gas barrier. Contact with oxygen causes oxidation of many foods, which affects their colour, consistency and taste. A barrier coating keeps oxygen and carbon dioxide out of the pack.

So the packaged food stays fresh and edible for longer.

Heiko Mack: Exactly. EXCEVAL™ has been used as a gas barrier in plastic packaging for many years. It is now also being used more frequently

as an oxygen barrier in paper packaging. And that is good news because EXCEVAL™ does not contain solvents or chlorine. Unlike coatings based, for example, on acrylic latex, EXCEVAL™ is completely biodegradable in water. In combination with paper, it is an environment-friendly alternative to conventional food packaging ...

... and reduces packaging waste?

Heiko Mack: In Europe, more than 70 percent of waste paper is currently recycled, compared with less than a third of plastic waste. One reason is that recycling waste paper is far easier. Economically, it often makes better sense than recycling plastics. EXCEVAL™ enables producers to increase the functionality of paper. And coated paper containing up to 5 percent EXCEVAL™ can simply be disposed of via the paper recycling process.

There are strict regulations on food packaging. What applications is Exceval suitable for?

Heiko Mack: EXCEVAL™ meets the highest food safety requirements. EXCEVAL™ coatings are approved for applications where they come directly into contact with food. For example, it meets the strict requirements of the US Food and Drug Administration. It also meets the criteria defined by Germany's Federal Institute for Risk Assessment.

From 2021, single-use plastic products will not be permitted in the EU. Can EXCEVAL™ play a part here as well?

Heiko Mack: Definitely. EXCEVAL™ offers ways of replacing single-use plastic products in the future. For example, its water-repellent properties mean it can be used as an adhesive for paper drinking straws. It also has processing benefits: EXCEVAL™ has very good film-forming properties and is suitable for many commonly used printing and coating processes. We market this product in various modifications, viscosities and hydrolysis grades designed specifically for different applications.

Kuraray's product range includes other high-performance barrier materials ...

Heiko Mack: One example is EVAL™, which was one of the first barrier copolymers and is still the market leader. It can be used flexibly in many processes such as co-extrusion and co-injection processes. As a monolayer, it is also suitable for laminating processes. Another barrier material is PLANTIC™.

Kuraray's starch-based biopolymer?

Heiko Mack: Yes, Kuraray's subsidiary Plantic Technologies Limited markets PLANTIC™ packaging material with excellent gas barrier properties. Sustainability is the keyword here. This biopolymer does not contain any artificial plasticisers and is around 80 percent starch. That means it is fully biodegradable. Another important aspect is that it is produced entirely from raw materials that are not genetically modified.

What developments do you expect to see on the market for packaging and speciality papers in the future?

Heiko Mack: Discussions such as those we have had at the Specialty Papers Conference this week show a clear trend towards paper with barrier properties. I expect many new products to come onto the market in this field in the next few years. EXCEVAL™ is a product that meets the packaging industry's rising demands. We provide advice and assistance for

our customers, for example, in the development of new formulations for speciality papers. That means we are always very close to the market.

Thank you for talking to us.

[Infobox Persönlich]

Heiko Mack

Since 2014, Heiko Mack has been head of the Polyvinyl Alcohol (PVA) business unit at Kuraray, one of the world's leading speciality chemicals companies, which is based in Tokyo, Japan, and has its European headquarters in Hattersheim, near Frankfurt am Main, Germany. As Head of the Poval Business, Heiko Mack's product responsibilities include Kuraray POVAL™, ELVANOL™, EXCEVAL™ and MOWIFLEX™.

[Infobox Barrierematerialien von Kuraray]

The perfect barrier to keep oxygen out: effective, printable, sustainable

Kuraray's barrier products EXCEVAL™, EVAL™ and Plantic™ give food packaging a functional barrier to keep oxygen at bay. In this way, they increase the shelf-life of food and help to reduce waste. The specific properties of these products make them suitable for range of different applications:

EXCEVAL™ – the biodegradable coating for sustainable packaging

- EXCEVAL™ gives plastic and paper packaging an excellent barrier to oxygen, grease and oil.
- This ethylene vinyl alcohol copolymer is supplied as an aqueous solution, so coatings are easy to apply.
- EXCEVAL™ is biodegradable in water, free of chlorine and solvents, and meets the demanding requirements for food-contact use.

EVAL™ – the first and leading barrier material

- Thanks to EVAL™'s outstanding barrier properties, even an extremely thin layer of just four micrometres keeps oxygen out of food packaging, so the food stays fresh and keeps its aroma for longer.
- This barrier resin can be processed in co-extrusion and co-injection processes. As a monolayer film, it is also suitable for laminating processes.
- Even a very thin layer of EVAL™ is a very effective barrier. That reduces the weight of food packaging and the inputs used to produce it.

PLANTIC™ – the fully sustainable packaging solution

- PLANTIC™ biopolymer contains 80 percent starch.
- PLANTIC™ is completely free of artificial plasticisers and is fully biodegradable.
- As a barrier material, it gives packaging an effective gas barrier.
- Laminated onto paper, PLANTIC™ allows the creation of high-performance, fully biodegradable packaging.

[Pictures and captions]



[Photo 1] “It’s important to find alternatives to plastics to reduce waste packaging,” says Heiko Mack, Head of Poval Business at Kuraray. “Barrier coatings like our EXCEVAL™ copolymer help create recyclable packaging solutions such as paper-based food packaging.”



[Photo 2] Less plastic on supermarket shelves: “EXCEVAL™ gives paper packaging an excellent barrier to oxygen, grease and oil. And packaging containing up to 5 percent EXCEVAL™ can be disposed of simply via the paper recycling process, says Heiko Mack, Head of Poval Business at Kuraray. By 2030, all plastic packaging in the EU will have to be recyclable or reusable.



[Photo 3] Environmentally compatible oil, grease and gas barrier for paper packaging: “There is a trend to paper packaging with barrier coatings, for example, for ready-made meals,” says Heiko Mack, Head of Poval Business at Kuraray. “Paper packaging coated with EXCEVAL™, our high-performance barrier coating, meets the industry’s demanding requirements. In addition, this ethylene vinyl alcohol copolymer does not contain plasticisers and is biodegradable in water.”