What you need to know about '**microplastic-free**' seed coatings

What are 'microplastic-free' coatings?

These are materials that comply with the EU Microplastics Regulation[1]. A seed coating is compliant when all ingredients[2] fulfill at least one of the following criteria[3]:

- Biodegradability[4]
- Water solubility[5]
- Naturality[6]

Why should we care about 'microplastic-free' seed coatings?

Plastic-containing products, such as fertilizer or seed coatings lead to an accumulation of microplastics in the soil[7]. This affects the soil quality and can cause harm to the entire food chain and humans[8].
The EU has implemented restrictions concerning microplastics in response to these concerns. Non-compliant ingredients will need to be removed from seed coatings by 2028 (and by 2031 for coatings containing Plant Protection Products).

Are all 'microplastic-free' technologies equal?

Technologies classified as 'Microplastic-free' may show significant differences in their performance and biodegradation mechanisms, even while meeting the same regulatory requirements. Certain technologies, such as polyvinyl alcohol (PVOH), meet the requirements due to their water-solubility. However, this specific polymer category may show limited or absent degradability and potentially persist in the soil. In contrast, starch- and polyurethane-based **Amulix®** binders show biological degradability in both water and soil due to their chemical structure.

Future-proofing seed treatments with Amulix®

We'll make the choice easy for you: Our new seed coating solutions deliver high performance and are designed to comply with the biodegradable standards of the EU Microplastics Regulation. That includes everything from our partly bio-based polymers for organic agriculture, to our high-performance film coatings.

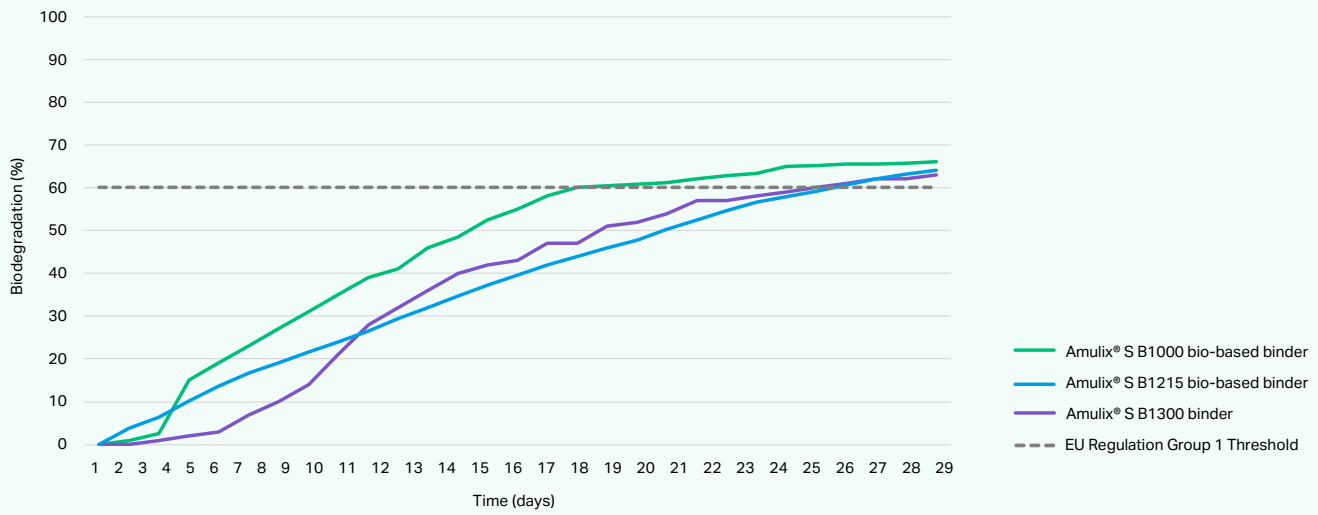
Third-party assessed biodegradability

Biodegradability of **Amulix®** binding polymers has been assessed by independent testing laboratories under Good Laboratory Practice (GLP) standards, following the methodology described in the EU Microplastics Regulation.

Amulix® binders demonstrate biodegradation rates equal to or exceeding 60% within 28 days according to OECD 301F (see Figure 1), thereby are qualified for exemption from the EU Microplastics Regulation.

All other ingredients of **Amulix®** seed coating formulations do not fall within the scope of the microplastics definition[9].

Figure 1: Biodegradation according to OECD 301F



Are you ready to make the shift?

We look forward to supporting your transition to biodegradable seed coatings.

For further information, please contact joern.brembach@covestro.com or visit: amulix.covestro.com

amulix

Naturally powerful seed coating

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1 Commission Regulation (EU) 2023/2055 of 25 September 2023 amending Annex XVII to Regulation (EC) No 1907/2006 (REACH);
2 Ingredients concerned by the regulation are polymer-containing or -coated particles with >0.01 wt.% polymer that are intentionally released in the environment, with solid particles dimensions of 0.1 µm ≤ x< 5 mm (< 15 mm for fibers);
3 Another criterion is the absence of carbon atoms in the polymer structure;
4 According to Amendment Annex XVII to Regulation (EC) No 1907/2006, Appendix [X];
5 Exceeding 2 g/L under defined standard conditions;
6 Non-synthetically modified composition within the meaning of the Regulation;
7 Khaled Ziani et al. , 2025. *Microplastics: A Real Global Threat for Environment and Food Safety: A State of the Art Review*;
8 Birguy Lamizana "Plastic planet: How tiny plastic particles are polluting our soil". UNEP, 22 Dec 2021 https://www.unep.org/news-and-stories/story/plastic-planet-how-tiny-plastic-particles-are-polluting-our-soil;
9 Based on declarations and material characterization of suppliers. Documentation available upon request.

Edition: 2025