

## ***How does your biodegradable plastic behave in the environment?***

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Biodegradable polymers are gaining ground in plastic manufacturing and are considered more sustainable materials for various applications. In cases where plastics are intentionally introduced into the environment, where loss is intrinsic to use, or where there is a high risk of loss, biodegradability can be part of the solution to reduce the accumulation of plastics in nature. For product safety, new materials need to be known in terms of their performance, including their fate and impact on the environment, and policy and legislation are increasingly demanding clear definitions and evidence of this. Specific data on the behaviour of a biodegradable polymer in the open environment are still scarce, and laboratory test results, often of little environmental relevance, are extrapolated to soil, freshwater and the sea. Claims, labels and certificates, as well as corporate commitments, however, need to be supported by science-based knowledge to take advantage of market opportunities and avoid loss of credibility or even regulatory compliance. HYDRA has been actively involved in the development of test methods since 2009, especially for marine environmental scenarios, many of which have found their way into international standards (ISO, EN, ASTM). With the established three-tier testing scheme (laboratory - mesocosm - field), not only can the inherent biodegradability of the material be reliably assessed. Also, specific biodegradation rates for specific environmental conditions and their range, e.g., across different climatic zones, can be determined and, based on these, environmental lifetimes can be predicted through modelling. This provides sound base data to answer the title question, and to fulfil requests formulated in the EU policy framework on biobased, biodegradable and compostable plastics.