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Building the Case for Biodegradable Absorbent Hygiene Products

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Disposable absorbent hygiene products (AHPs) play an important role in the everyday lives of consumers throughout the world. They are engineered composites which upon disposal consist of complex mixtures of natural and synthetic materials and human waste which are difficult to separate, making their integration into the circular economy challenging. Additionally, in markets with inadequate waste infrastructure, AHPs are often leaked into the environment, triggering a range of extended product responsibility activities to manage their impacts.

To address these issues, we propose the intentional design of AHPs for biodegradability to enable their integration into emerging systems for organics recycling and reduction of risks related to persistent microplastics upon leakage in the environment. This presentation will highlight some collaborative research efforts to explore and test this argument. First, we will examine a material selection strategy that facilitates balancing material requirements and environmental risk in unmanaged disposal scenarios followed by an approach to assess the biodegradation rates and processes for these complex multilayered products. Next, we will describe potential benefits and considerations for integrating AHP waste with organics recycling for municipalities and underserved communities. Lastly, we will discuss the system-level challenges which need greater collaboration across industries and stakeholders to create commercially viable applications for biodegradable materials.