

Safety of Recycled Polyolefins

Celine ABAD

CosPaTox - **Cosmetics, Packaging and Toxicology.**

Recycled plastic for packaging applications in consumers good industry is expected to increase fivefold over the next five years to well over one million tons per year. The biggest obstacle to meeting this demand and a rapid introduction of recycled plastics in packaging in this industry is the lack of qualitatively acceptable recyclates.

CosPaTox, a consortium working on the interface of **Cosmetics, Packaging, and Toxicology**, is committed to formulating so-far missing specific risk assessment guidance for high-quality Post-Consumer Plastic Recyclates (PCRs) for the use in cosmetic product and detergent packaging. In such finished products, important requirements exist for the safety of packaging applications.

The CosPaTox members represent the full value chain (recyclers, convertors, and brand owners) supported by academic partners. CosPaTox was established to support industry by defining *guidelines* and *quality levels* for the safe use of recycled plastics in cosmetics and detergents packaging, based on thorough analytical studies and toxicological principles. This work aims to support producers of cosmetics and detergent products in conducting risk assessments for their packaging and to support the recycling industry by defining test methods to determine or confirm the quality of recyclates.

CosPaTox focuses on polyolefin materials (r-HDPE, r-LDPE and r-PP), for which food contact approved recyclates are extremely rare. In the absence of a food contact approval, a dedicated risk assessment is required before recycled plastics can be used in packaging. The risk assessment approach developed by CosPaTox can also be applied to r-PET, but no specific testing of such recyclates has been conducted by CosPaTox as for this material, a much larger number of food contact approved grades already exists.

The CosPaTox consortium's approach is technology-neutral and does not take into account any particular recycling technology, but only the quality of the recycled materials. The project aims to finalize its work by end of 2023 and publish its findings in 2024.