

# **EFSA safety evaluation of mechanical recycling processes used to produce polyethylene terephthalate (PET) intended for food contact applications**

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The development of a scheme for the safety evaluation of mechanical recycling processes for polyethylene terephthalate (PET) is described. The starting point is the adoption of a threshold of toxicological concern such that migration from the recycled PET should not give rise to a dietary exposure exceeding  $0.0025 \mu\text{g kg}^{-1} \text{ bw day}^{-1}$ , the exposure threshold value for chemicals with structural alerts raising concern for potential genotoxicity, below which the risk to human health would be negligible. It is practically impossible to test every batch of incoming recovered PET and every production batch of recycled PET for all the different chemical contaminants that could theoretically arise. Consequently, the principle of the safety evaluation is to measure the cleaning efficiency of a recycling process by using a challenge test with surrogate contaminants. This cleaning efficiency is then applied to reduce a reference contamination level for post-consumer PET, conservatively set at  $3 \text{ mg kg}^{-1}$  PET for a contaminant resulting from possible misuse by consumers. The resulting residual concentration of each contaminant in recycled PET is used in conservative migration models to calculate migration levels, which are then used along with food consumption data to give estimates of potential dietary exposure.