Simulating a real recycling scenario for PET-based packaging: effect of cross-contamination, aging and reprocessing

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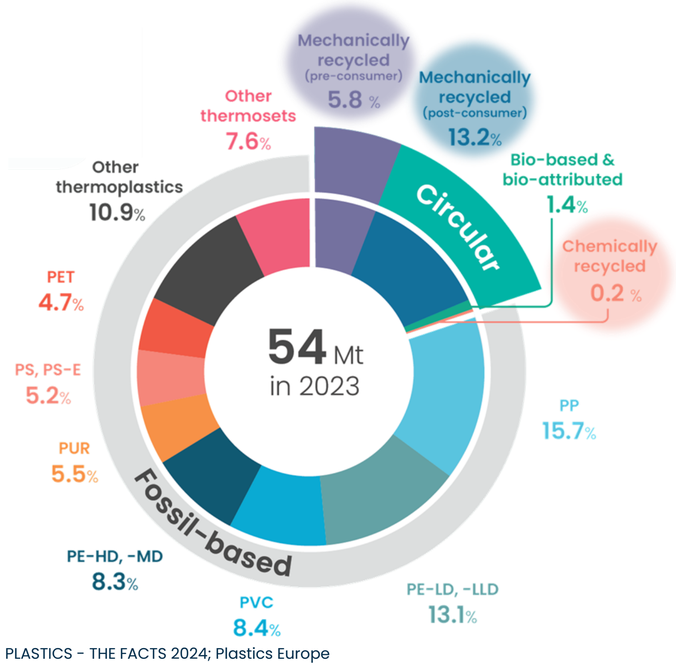
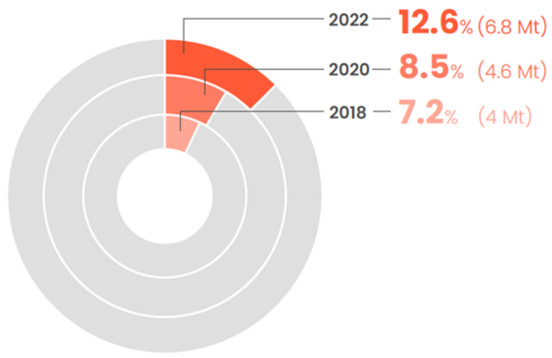
Research context



PLASTICS - THE FACTS 2024; Plastics Europe

POST-CONSUMER recycled content in new products

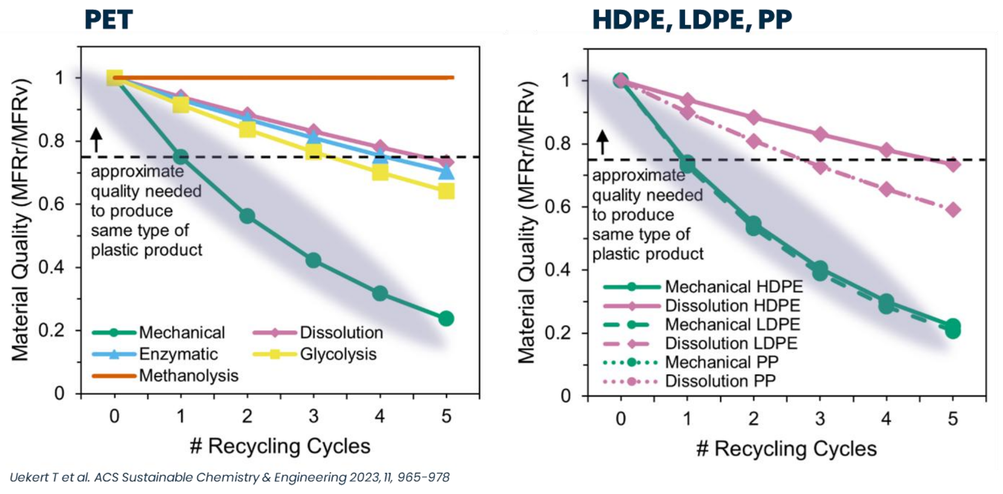


MECHANICAL RECYCLING WEAKNESSES

Worsening of **PROPERTIES** (mechanical, functional, aestethic appealing)

Deterioration of **PROCESSABILITY**

CROSS-CONTAMINATION

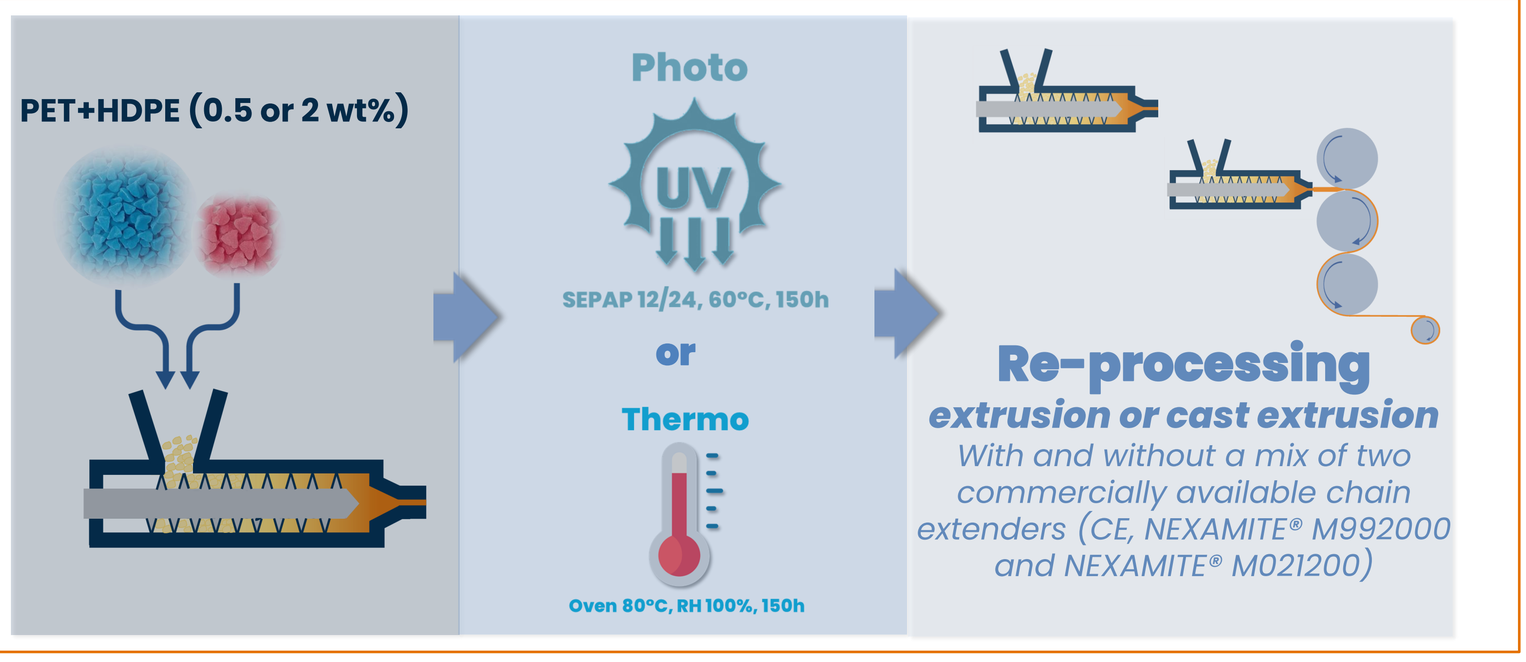


Uekert T et al. ACS Sustainable Chemistry & Engineering 2023, 11, 965-978

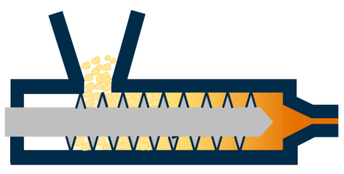
Aim of the work

PET-bottle

rPET from bottles can be contaminated by a fraction (< 2 wt%) of mis-sorted HDPE coming from caps and/or labels

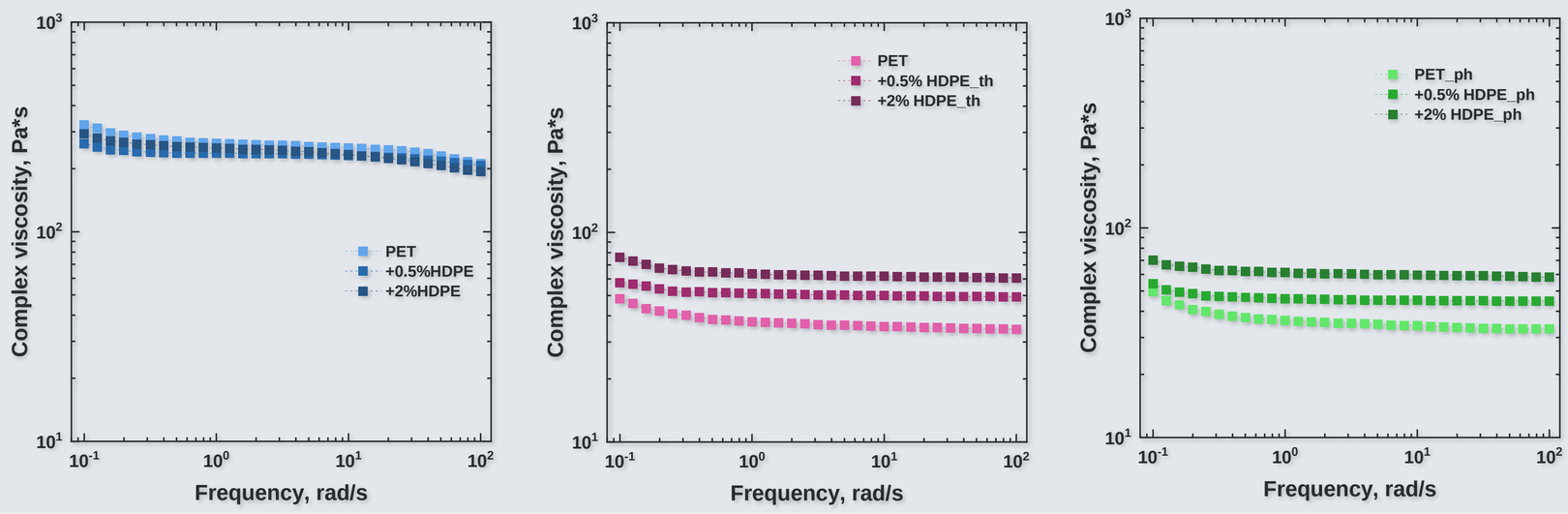


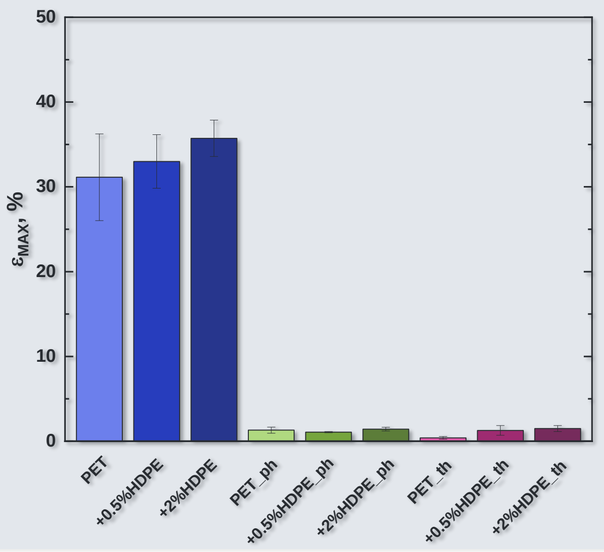
Results



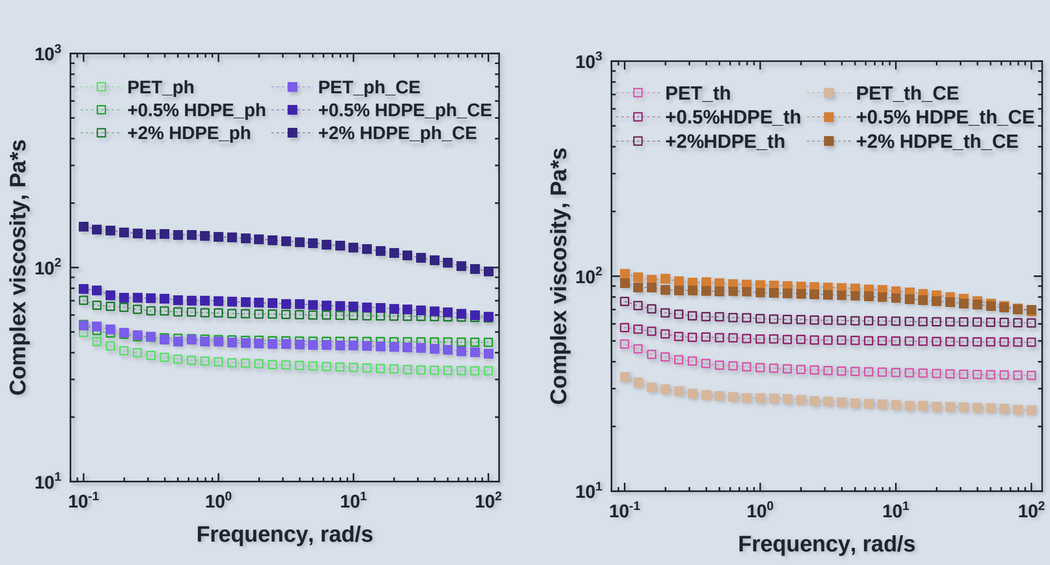
Extruded materials

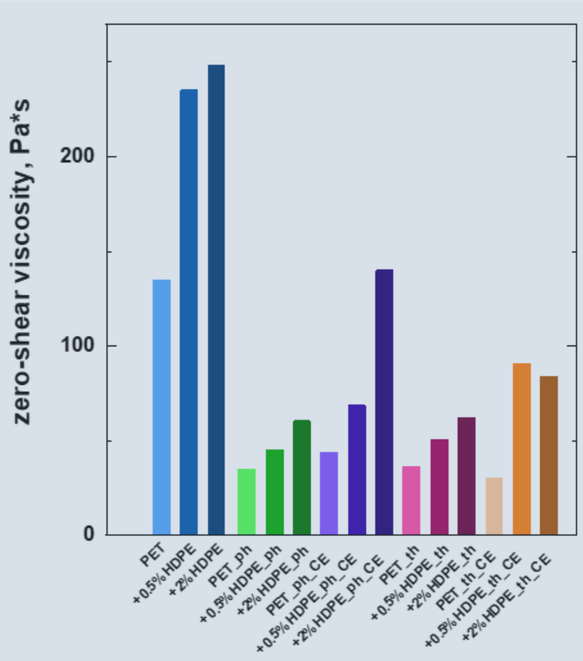
Interplay between aging and cross-contamination





Effect of chain extender introduction





Cast-extruded materials