

SUPPLEMENTARY DATA

Recyclability of thermoplastic polyurethane under repeated mechanical reprocessing: degradation mechanisms and volatile emissions

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Table S1 Shore A hardness measurements of TPU samples.

Shore A [-] Hardness		1. sample				2. sample				3. sample					
TPU ₁	$\frac{8}{7}$	87	88	88	87	90	89	89	90	90	91	94	91	89	93
rTPU _{n1}	$\frac{8}{6}$	85	87	88	88	84	84	87	85	87	90	90	89	90	86
rTPU _{n2}	$\frac{8}{7}$	92	91	91	94	89	86	87	91	87	92	93	85	92	93

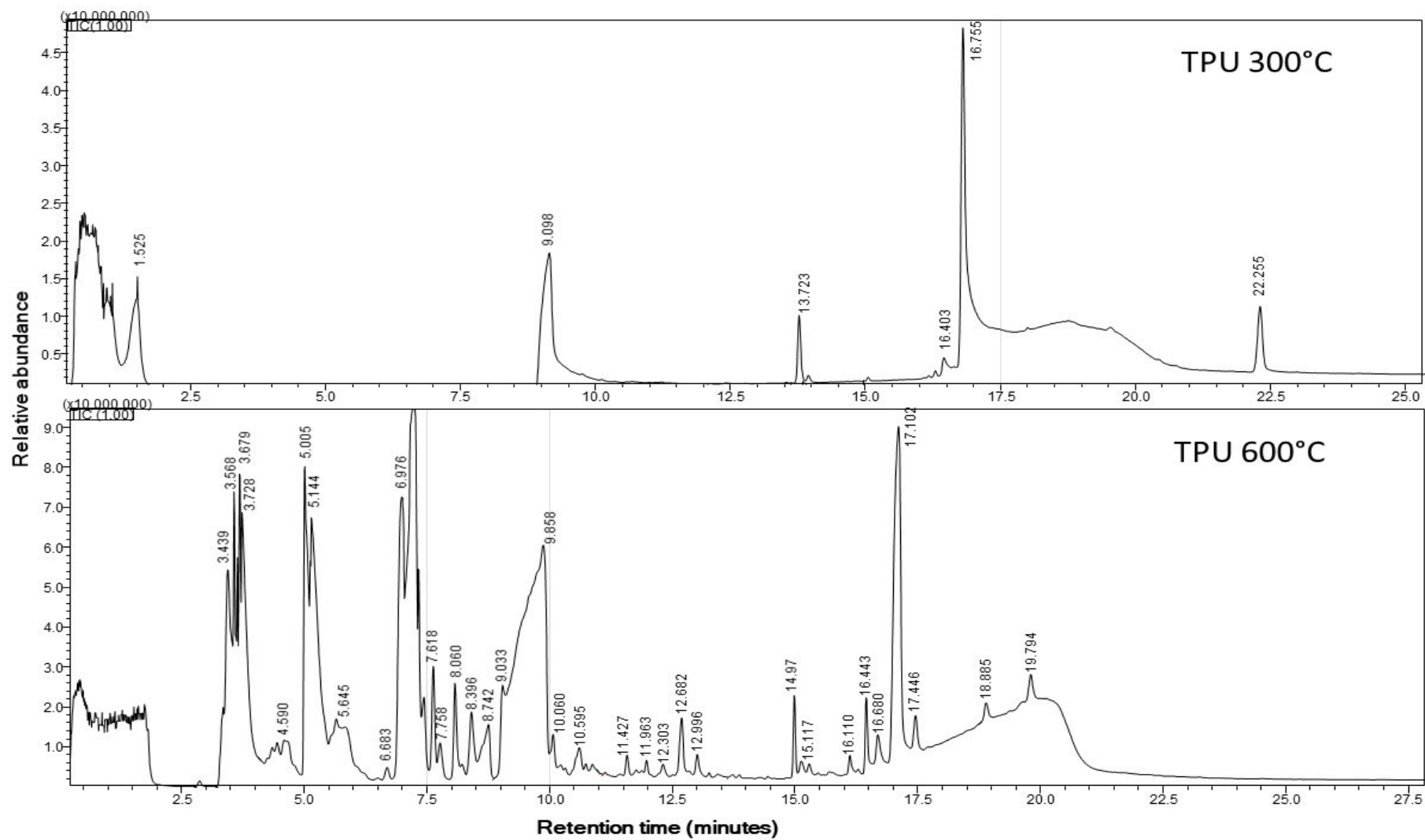


Figure S1 Pyrogram of virgin TPU by using 300 and 600 °C.

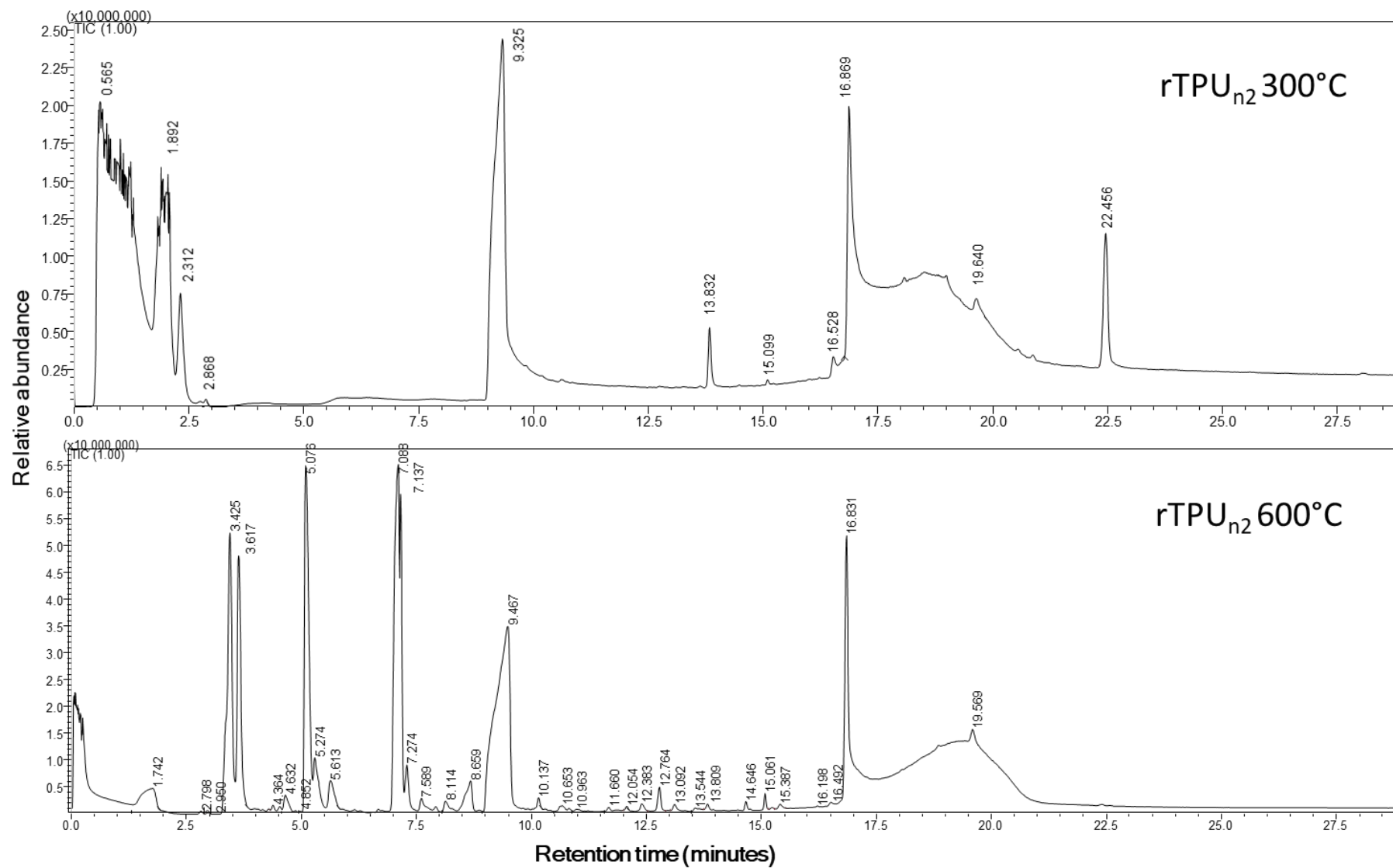


Figure S2 Pyrogram of 2 time reprocessed TPU by using 300 and 600 °C.

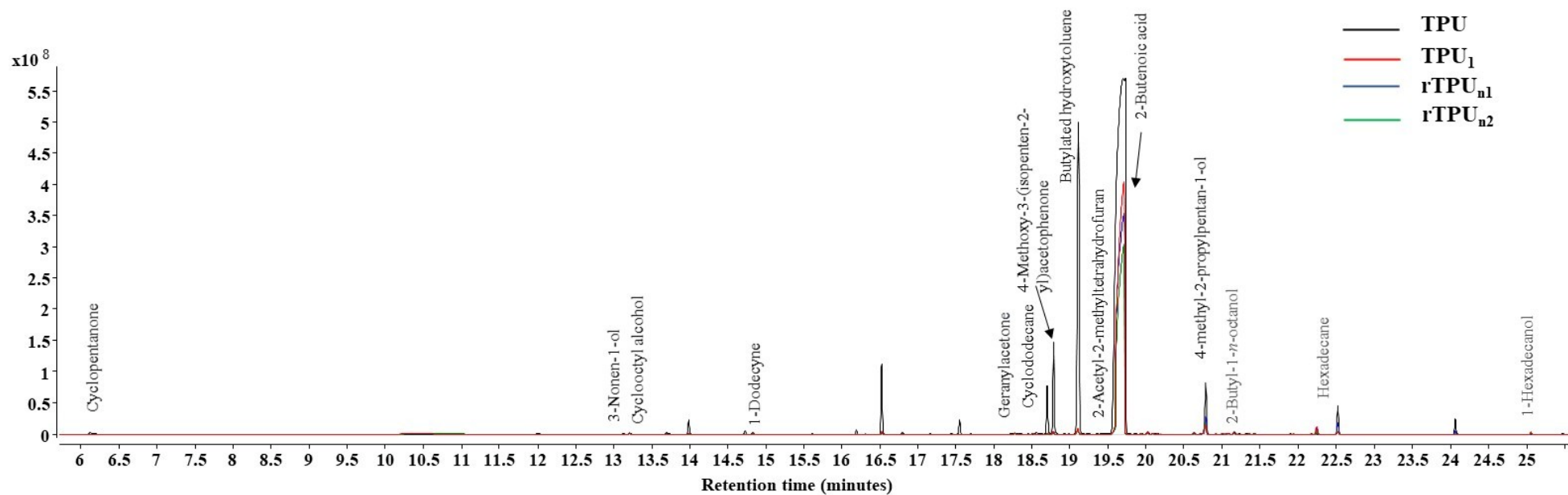


Figure S3 GC-MS chromatogram of virgin and reprocessed TPU, extraction of volatile compounds at temperature of 90 and 120 °C using HS-SPME-GC-MS.

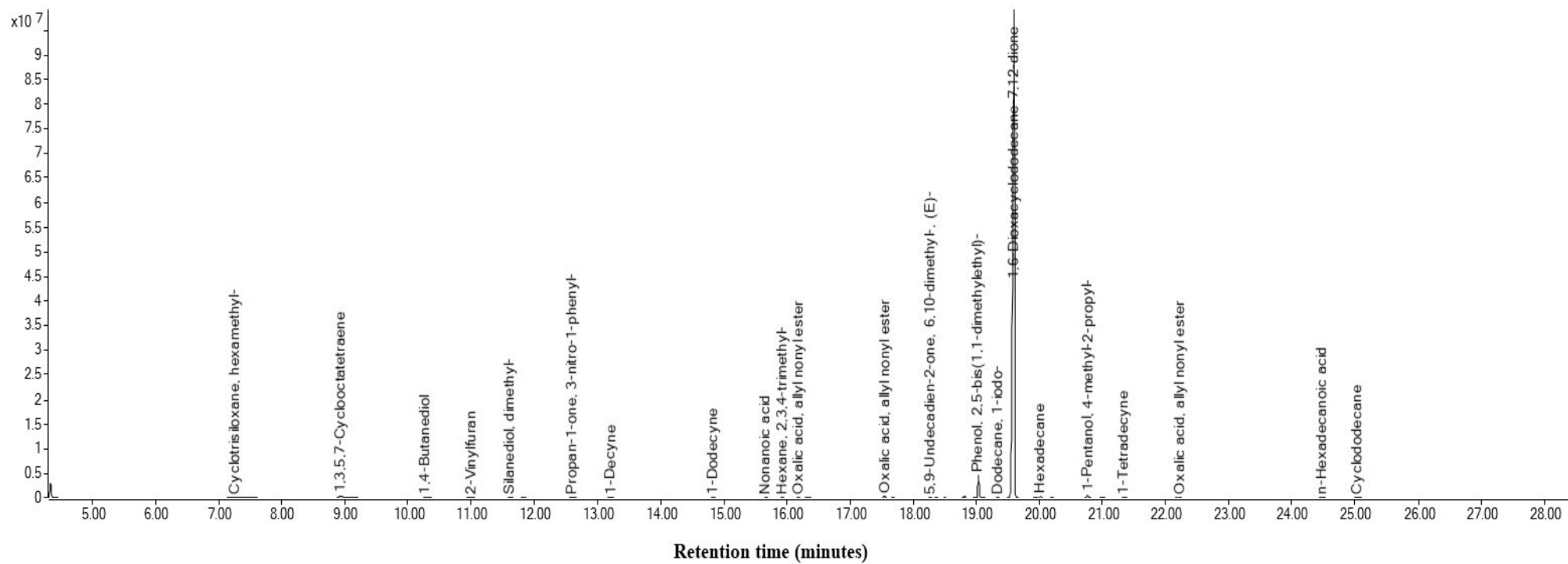


Figure S4 GC-MS chromatogram of 2 times reprocessed TPU (rTPU_{n2}), migration of volatile compounds into water using HS-SPME-GC-MS.