

Supplementary materials for the study:

Quantification of polyethylene terephthalate microplastics and nanoplastics in environmental samples using a simplified in-matrix depolymerization method

Lei Tian¹, Ewa Skoczynska¹, Deepti Siddhanti¹, Robert-Jan van Putten², Heather A. Leslie³ and Gert-Jan M. Gruter^{1,2*}

¹ van 't Hoff Institute for Molecular Sciences (HIMS), Universiteit van Amsterdam, Science Park 904, 1098 XH Amsterdam, the Netherlands;

² Avantium Support BV, Zekeringstraat 29, 1014 BV Amsterdam, the Netherlands;

³ Department of Environment and Health, Vrije Universiteit Amsterdam, De Boelelaan 1085, 1081 HV Amsterdam, The Netherlands;

* Correspondence: G.J.M.Gruter@uva.nl.

Table S1. Environmental samples information

Environmental samples	Sampling locations	Organic content (%)
Sand 1	Amsterdam	< 1%
Sand 2	Amsterdam	< 1%
Sand 3	Leiden	< 1%
Sand 4	Den Haag	< 1%
Sand 5	Andijk	< 1%
Sand 6	Rockanje	< 1%
Sand 7	Numansdorp	< 1%
Dust 1	Amsterdam	92.2%
Dust 2	Amsterdam	84.5%
Dust 3	Amsterdam	84.9%
Dust 4	Amsterdam	75.6%
Dust 5	Purmerend	60.8%
Dust 6	Zaandam	73.3%
Dust 7	Amsterdam	49.2%
Dust 8	Haarlem	60.5%
Dust 9	Amstelveen	80.0%
Dust 10	Amsterdam	73.2%
Dust 11	Hilversum	68.5%
Dust 12	Amsterdam	48.4%
Dust 13	Amsterdam	89.8%
Dust 14	Amsterdam	91.8%
Dust 15	Amsterdam	85.8%
Dust 16	Amstelveen	90.3%
Dust 17	Amsterdam	51.1%
Dust 18	Eindhoven	80.6%
Dust 19	Amsterdam	75.5%
Dust 20	Wormer	49.3%
Sludge	Horstermeer	91.4%

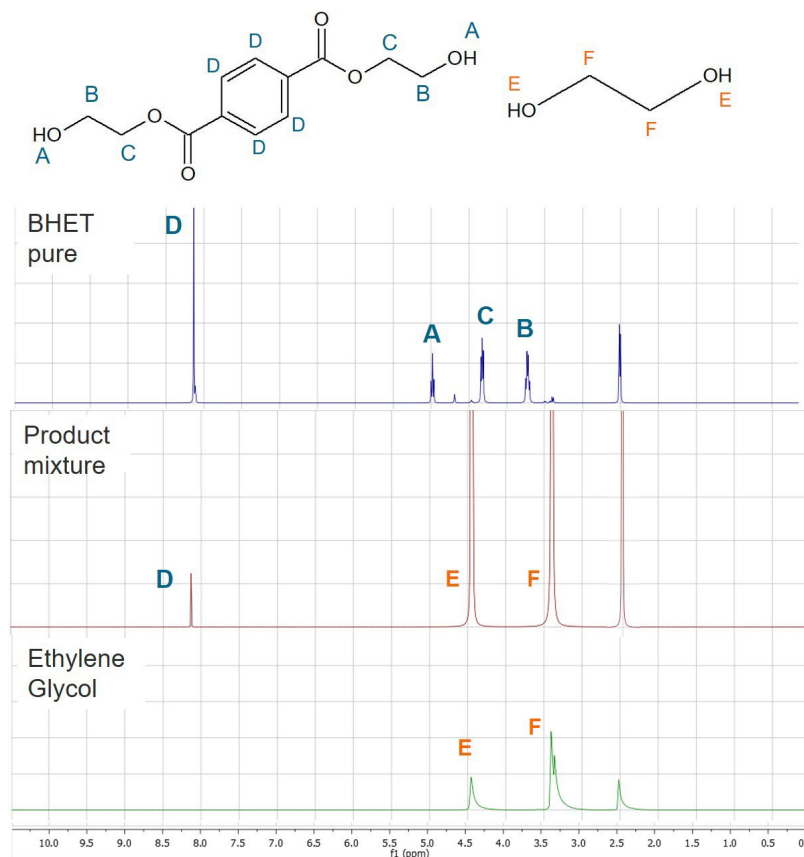


Figure S1. $^1\text{H-NMR}$ spectra for pure BHET, reaction mixture (reaction for 6h) and pure ethylene glycol.

Note: The chemical structure of BHET (top left) and ethylene glycol (top right) were shown on Figure S1. All samples were prepared in DMSO-d_6 , with identification of the relevant corresponding proton peaks.

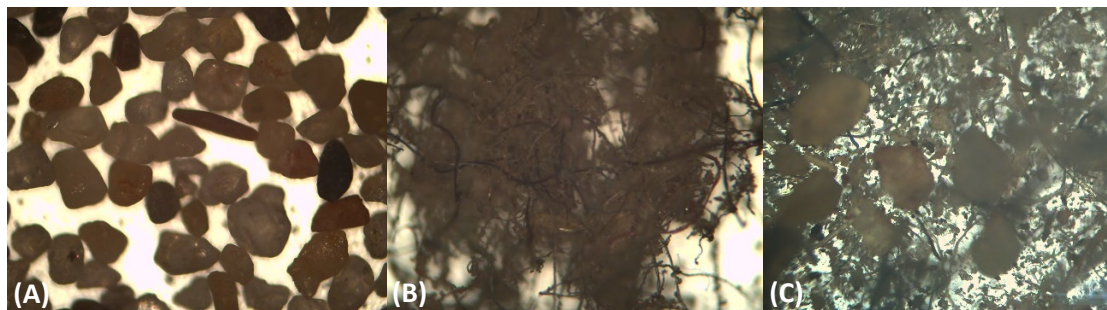


Figure S2. Microscope photos for sand and indoor dust samples (zoom in 10X)

Note: A is Sand 2, B is Dust 14 and C is Dust 20.