

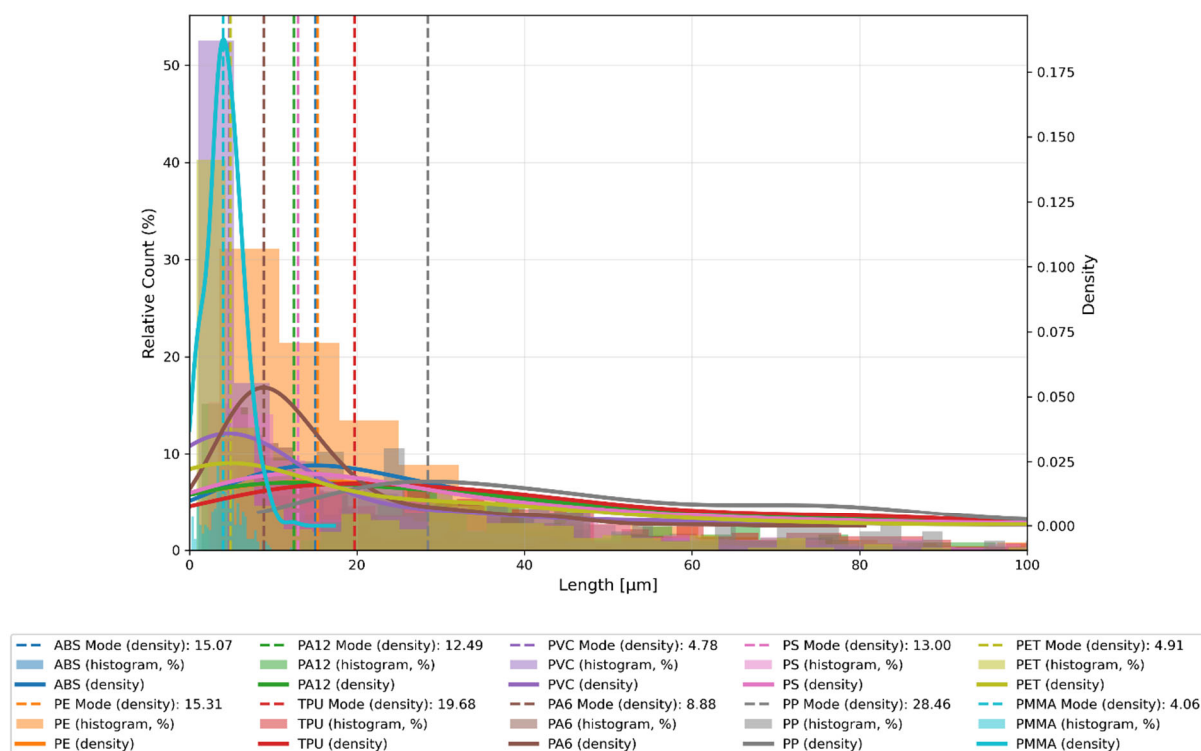
Supporting Information

Weathered microplastics in human blood: Unraveling the effect of structural changes at the particle surface on coagulation and platelet activation

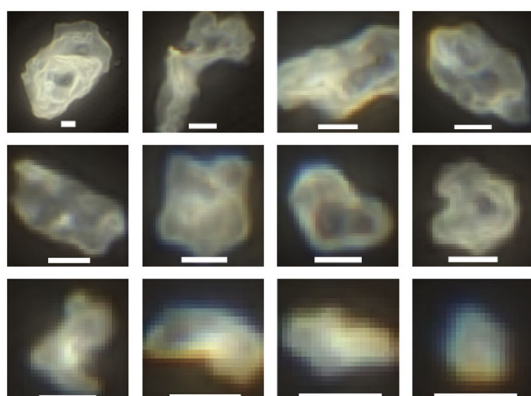
Manfred F. Maitz, Robin Lenz, Steven Winkler, Mara F. Abschke, Carsten Werner, Dieter Fischer

Supporting Figures

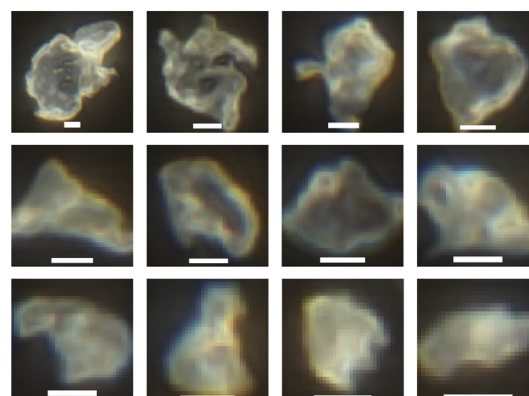
A



B

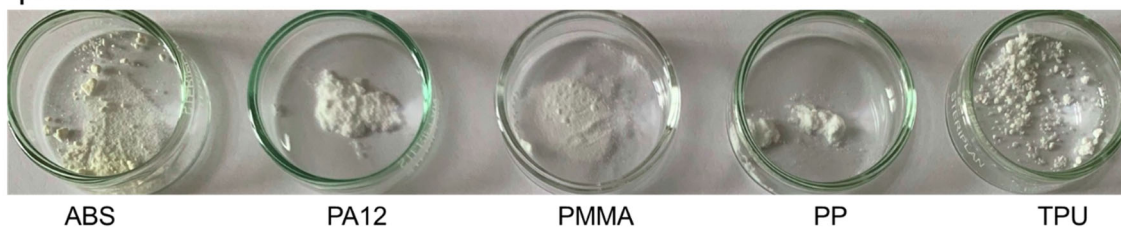


C



Supporting Figure S1: A: Particle size distribution of pristine polymer particles. Bars show the relative binned particle counts. Dashed vertical lines indicate the modes of the estimated probability density functions (0.4 μm Gaussian kernel, solid lines). An interactive version of the plot with configurable distribution parameters (e.g. binning, bandwidth, displayed moment) can be found in the accompanying data repository at <https://doi.org/10.5281/zenodo.14535075>. SEM image comparisons before and after weathering (**Supporting Figure S3**) did not indicate preferential erosion of the smaller fraction. B (PS) and C (PET): exemplary particle darkfield images with 10 μm scalebar.

pristine



ABS

PA12

PMMA

PP

TPU



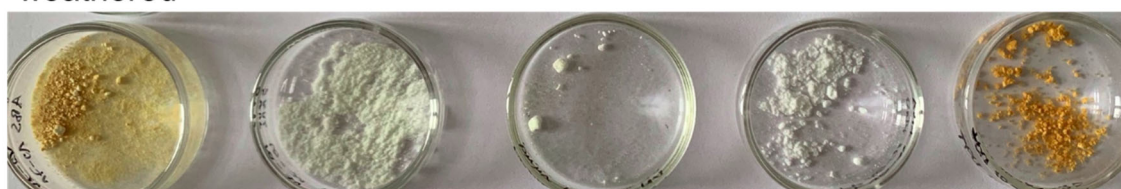
PVC

PS

PET

ABS

weathered



ABS

PA12

PMMA

PP

TPU



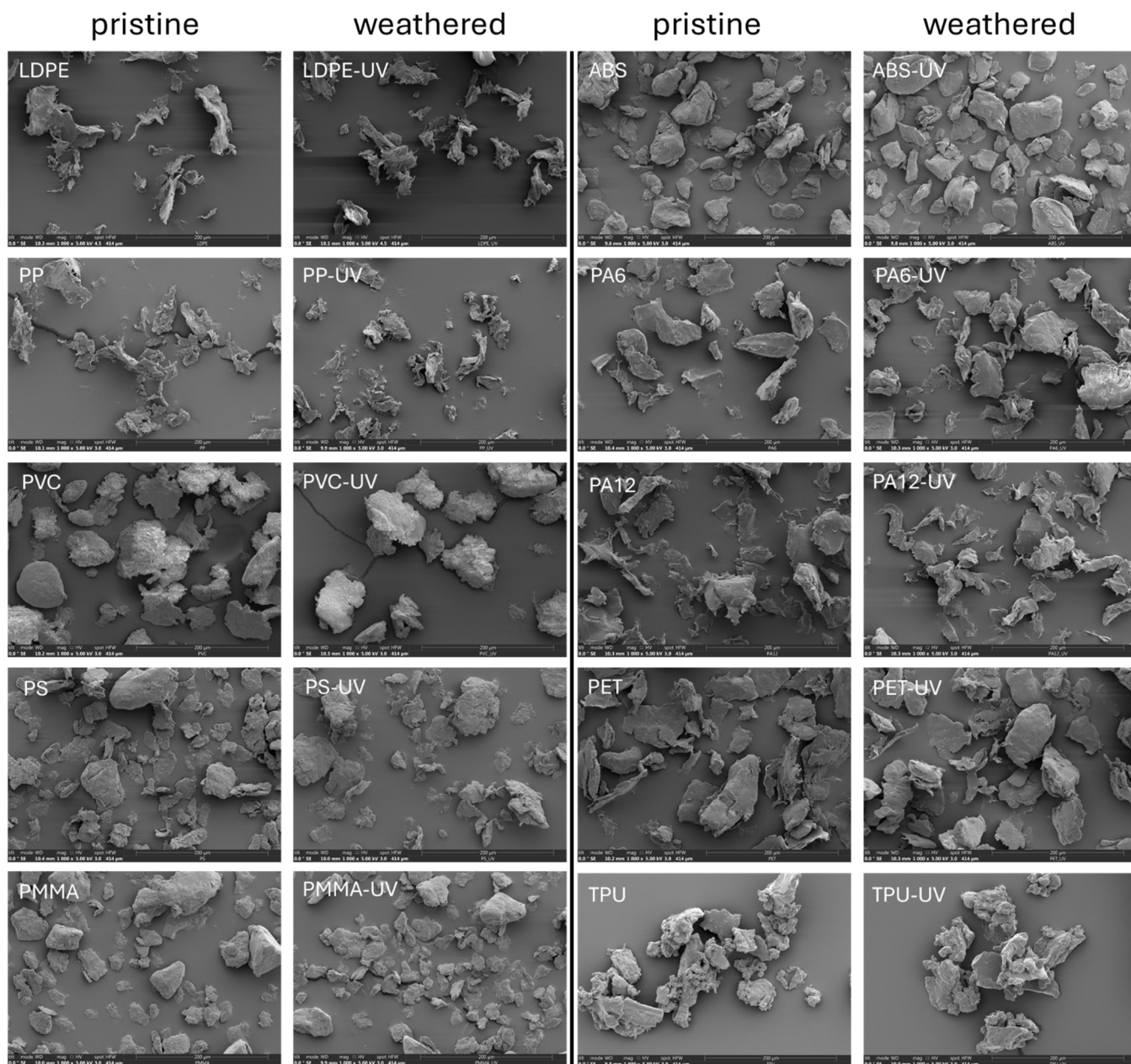
PVC

PS

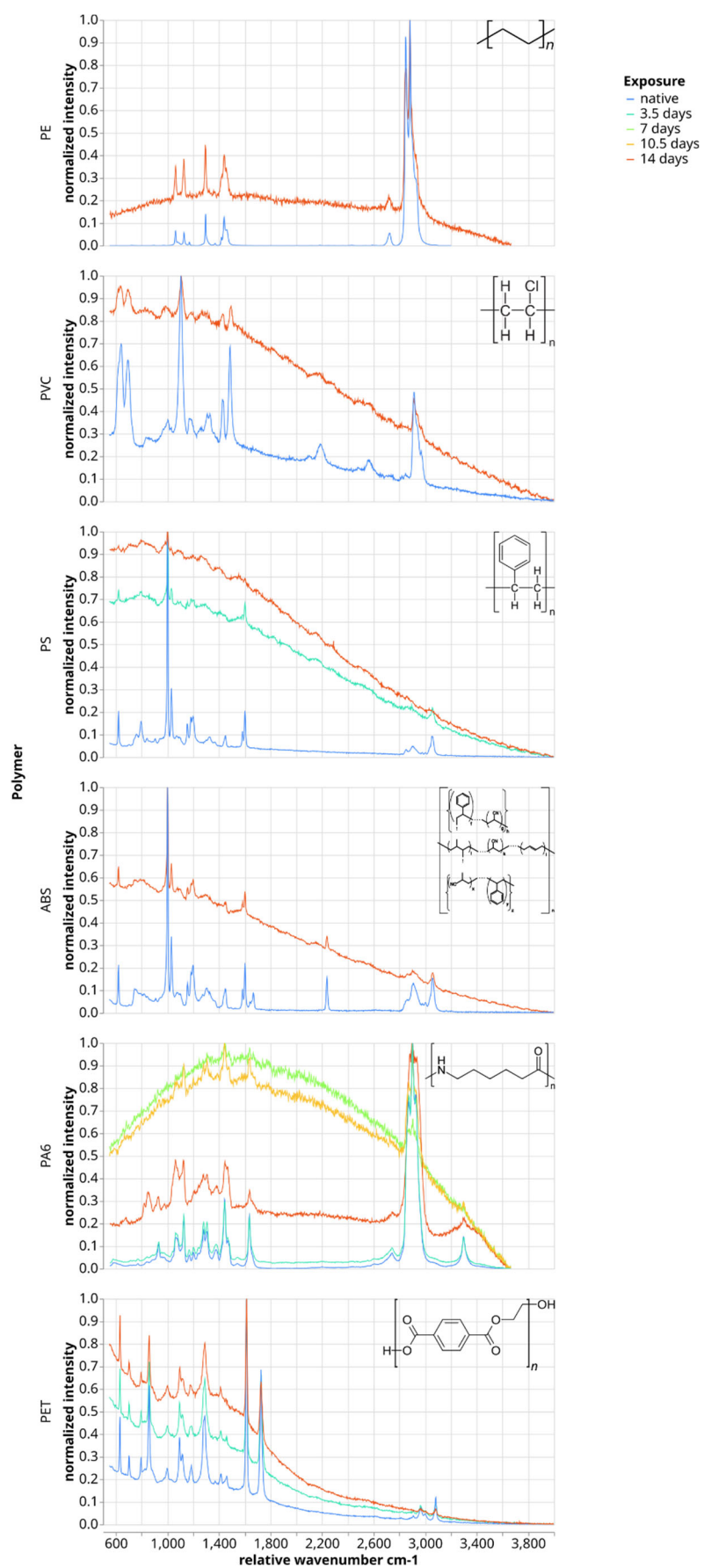
PET

ABS

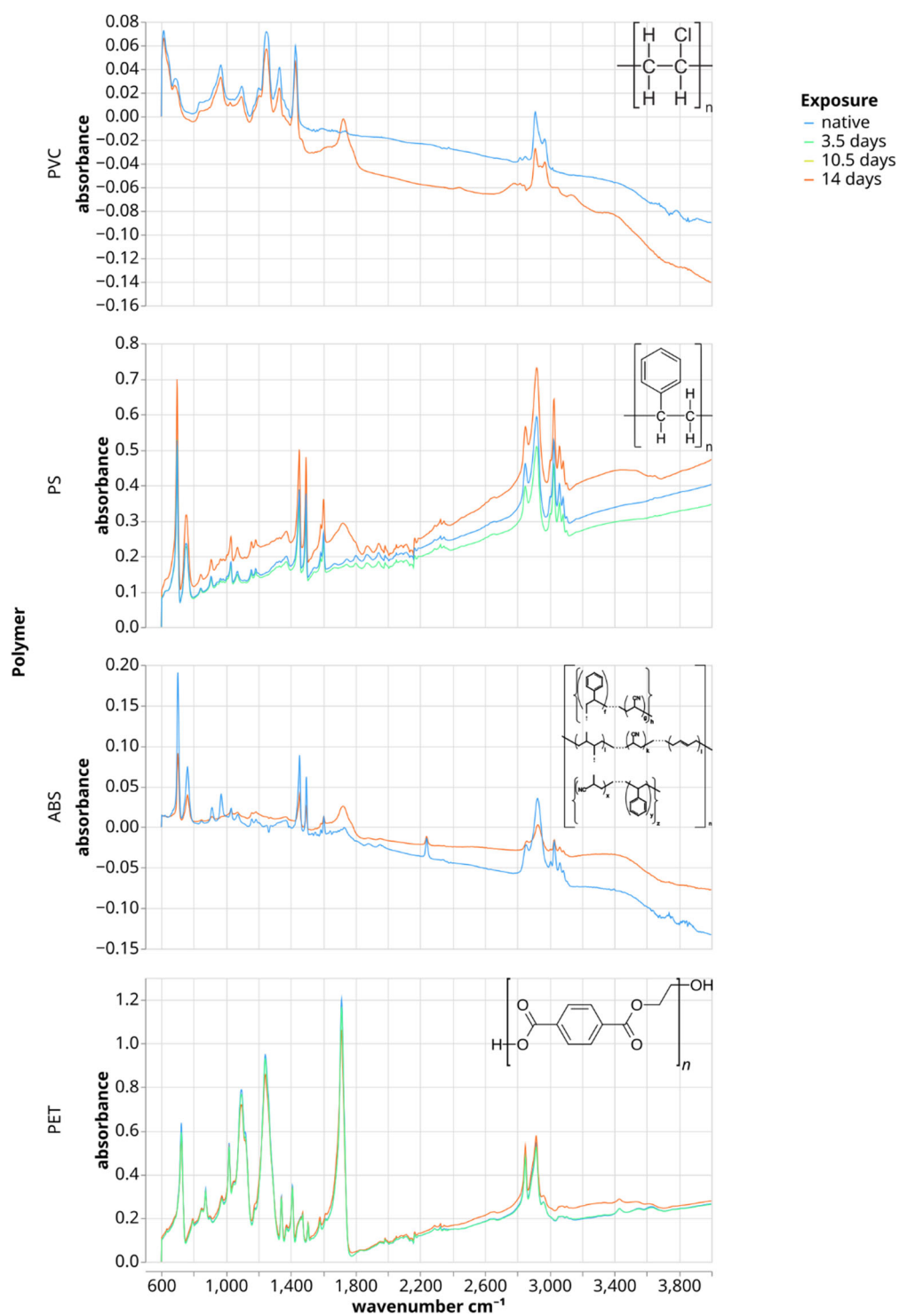
Supporting Figure S2: Photographic examples of polymers before and after 14 days of weathering in UV and cyclic temperature and humidity variations.



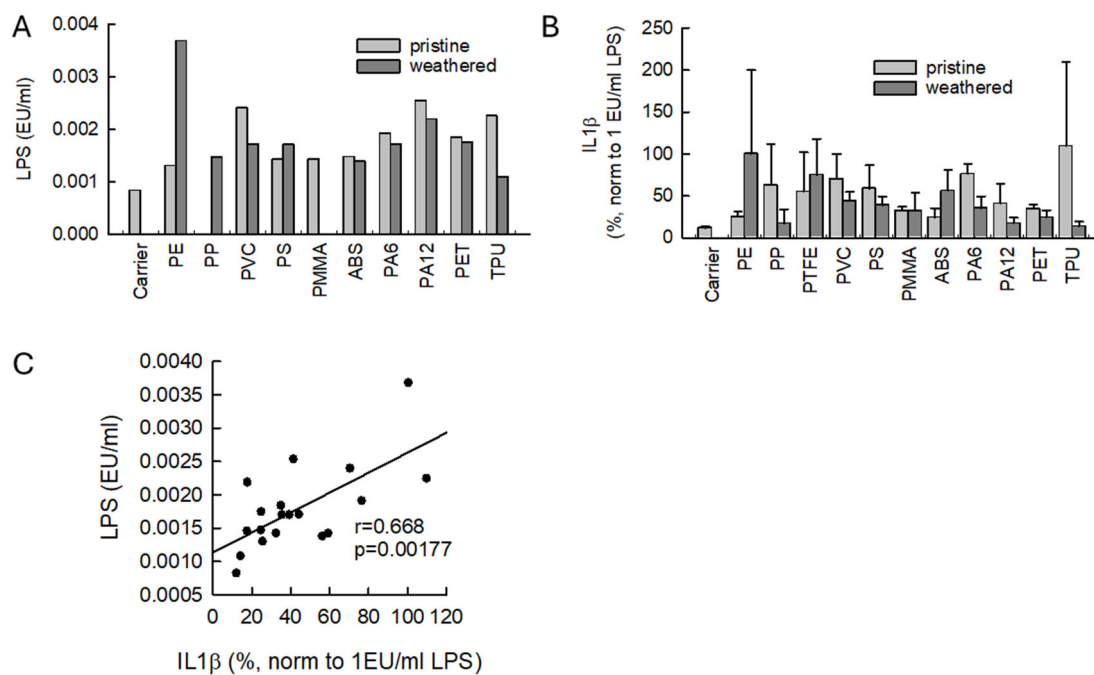
Supporting Figure S3: SEM images of pristine and UV, temperature and humidity weathered MPs. Image width 414µm.



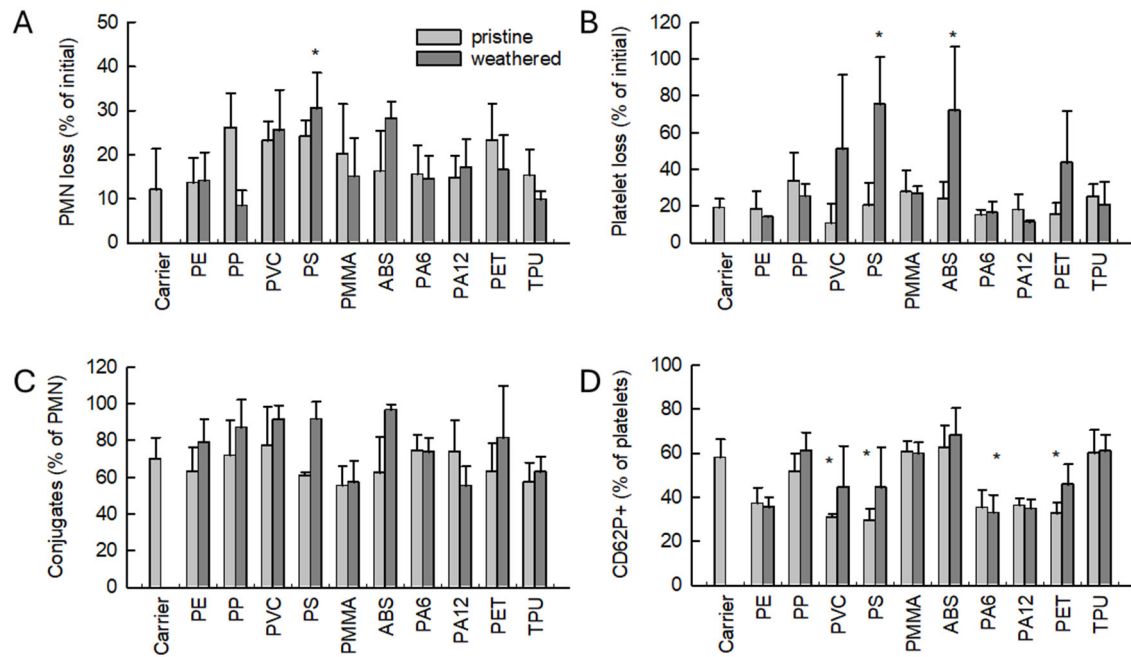
Supporting Figure S4: Raman spectra of pristine and weathered polymer particles.



Supporting Figure S5: FTIR spectra of pristine and weathered polymer particles.



Supporting Figure S6: A: Endotoxin concentration in 0.1 mg/ml MP suspensions in water. The particle concentration is oriented at the concentration applied in the whole blood experiment. (concentrations obtained in a single measurement) B: Pyrogenicity test: IL-1 release during 16 h incubation of 1:12 diluted whole blood with 8 μ g/ml MPs. C: Correlation of the endotoxin data from A and IL1 β data from B.



Supporting Figure S7: Blood cell response to the incubation of whole blood with 0.1 mg/ml MP. (A) Loss of granulocytes (B) Loss of blood platelets (C) Conjugate formation of platelets with leukocytes, presented as % of granulocytes associated with platelets. (D) P-selectin (C62P) expressing platelets in blood. Asterisk (*) indicates a significant difference to the carrier blank. Mean $\pm$ SD of n=3.