Supplementary Materials

Microplastics in Landfill Leachate: A Comprehensive Review on Characteristics, Detection, and Their Fates during Advanced Oxidation Processes

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Table S1. Common microplastic properties.

Plomer	Full Name	Elemental Structure	Bond Type	Carbon Content	Density (g/cm^3)
PE	Polyethylene	$(C_2H_4)_n$	C-C	86%	0.96
PP	Polypropylene	$(C_3H_6)_n$	C-C	86%	0.89~0.91
PVC	Polyvinyl chloride	$(C_2H_3Cl)_n$	C-C	38%	1.35–1.50
PS	Polystyrene	$(C_8H_8)_n$	C-C	92%	1.05
ABS	Acrylonitrile butadiene styrene resin	$(C_8H_8 \cdot C_4H_6 \cdot C_3H_3N)_x$	C-C,C=C, Benzene	85%	1.05–1.18
PET	Polyethylene terephthalate	$(C_{10}H_8O_4)_n$	Benzene	63%	1.30–1.40
PU	Poly urethane	$(C_{10}H_8N_2O_2C_6H_{14}O_3)_n$	The backbone contains duplicate urethanes	89%	0.04–0.06
EVA	Ethylene-vinyl acetate copolymer	$(C_2H_4)_x \cdot (C_4H_6O_2)_y$	Vinyl acetate monomer	63%	0.92–0.98
PA	PolyamideNylon	$(NH\text{-}(CH_2)_5\text{-}CO)_n$	Amide groups	34.80%	1–1.16
PES	polyester	$(OCH_2CH_2O_2CCH_2CH_2CO)_n$	Aromatic rings Ester groups	41.70%	1.37–1.51
EP	Epoxy resin	$(C_{11}H_{12}O_3)_n$	Epoxy groups	68.70%	1.2
PF	Phenol-formaldehyde resin	$(\text{-}C_6H_6\text{-}CH_2\text{-})\text{-}OH$	Benzene	77%	1.22
PPC	Poly propylene carbonate	$HO\text{-}(\text{-}CH_2\text{-}CH(CH_3)\text{-}O\text{-}COO\text{-})_n\text{-}H$	C-O carboxyl	30%	1.1–1.3

PMMA	Polymethyl methacrylate	$(C_5O_2H_8)_n$	C-C	60%	1.15–1.19
PDMS	Polydimethylsiloxane	$(C_2H_6OSi)n$	Dimethyl siloxane	86.00%	0.965–0.980
PTFE	Polytetra fluoroethylene	$(C_2F_4)n$	Tetrafluoroethylene	86.00%	2.20
PVA	Polyvinyl alcohol	$(C_2H_4O)n$	-OH	38.00%	1.26–1.29
PVB	Polyvinyl butyral resin	$H_2(C_8H_{14}O_2)n$	C=C	92.00%	1.08–1.10
PMP	Poly(4-methyl-1-pentene)	$C_7H_{14}O_3$	C-C	85.00%	0.943～0.953
EAA	Ethylene acrylic acid	$C_{13}H_{15}O_2$	C=C	63.00%	0.96
PAEK	Polyetherketoneketone	$(C_{13}H_{12}O_2)_n$	Benzene, -C=O	89.00%	1.35
PAM	Polyacrylamide, polyacrylic amide	$(C_3H_5NO)_n$	C-C	63.00%	1.30
kevlar	Kevlar	$(C_{14}H_{10}O_2N_2)_n$	Benzene	34.80%	1.44
PDO	Propanediol	$C_3H_8O_2$	C-C, -OH	41.70%	1.05
PSB	Poly(styrene-co-butadiene)	$C_{17}H_{22}O_2$	C=C	68.70%	0.9–0.95
PAA	Polyacrylic acid	$(C_3H_4O_2)_n$	C-C, C=O	77.00%	1.09
PBMA	Poly(n-butylamethacrylate)	$C_{18}H_{20}N_6$	-CHO	30.00%	1.30
PBT	Polybutylene terephthalate	$C_{12}H_{12}O_4$	Benzene	60.00%	1.32
PCL	Polycaprolactone	$C_6H_{10}O_2$	-CHO	63.16%	1.02
PEMA	Polyethylmethacrylate	$C_6H_{10}O_2$	-CHO	63.16%	0.91
PiBMA	Polyisobutyl methacrylate	$C_8H_{14}O_2$	-CHO	54.50%	0.89
PVAC	Polyvinyl acetate	$(C_4H_6O_2)_n$	-COOH	66.60%	1.19
PVDF	Polyvinylidene difluoride	$(CH_2CF_2)_n$	C-C	57.50%	1.78
PVP	Poly(n-vinyl pyrrolidone)	$(C_6H_9NO)_n$	Alkane ketone	76.80%	1.23–1.29
RUBBER	Poly-(cis1,4-isoprene)	$C_{22}H_{28}N_2O_6S$	Isoprene	78.00%	1.30
PEUR	Polyether urethane	$C_{15}H_{22}N_2O_2$	C-O-C	50.70%	1.25
PEC	Chlorinated polyethylene	C_4H_7Cl	C=C	70.50%	0.93–0.96
acrylic	Acrylic	$C_5H_8O_2$	C-C	47.40%	1.19
PAT	Polyarylate	$C_8H_6O_4$	Benzene, ester group	79.70%	1.20–1.25