Electronic Supplementary Material (ESI) for Analytical Methods.

Sampling, isolating and identifying microplastics ingested by fish and invertebrates: a critical review

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It is a balance is struck between using a digestive agent with the capacity to efficiently digest biological material without damaging or eliminating any microscopic plastics particulates or fibres present. As measures of resistance are somewhat vague (e.g. “partially resistant”, “some effect”, “limited resistance”, “slight attack”), we categorised plastics as ‘resistant’, ‘partially resistant’, or ‘non-resistant’, with lower resistance assumed where data conflicted.

Table S1. Chemical resistance of polymers. Data relates to Nylon 6,6 (PA, Polyamide), polycarbonate, (PC), (high density) polyethylene (HDPE, PE), polyethylene terephthalate (PET, polyester), polypropylene (PP), polystyrene (PS) and (rigid) polyvinyl chloride (PVC). Polymer resistance was categorised as: resistant (**R**), where chemicals had no effect on the plastic; partially resistant (**PR**), where swelling, deformity or minor damage to the plastic was noted; or, non-resistant (**NR**), where significant loss or complete destruction of the plastic was observed. Data was compiled from 4 chemical resistance datasets. Where data is conflicting lower resistance is assumed (i.e. NR>PR>R). Tests were conducted at 20˚C; * denotes tests were conducted at 50˚C.

Treatment	PA	PC	PE	PET	PP	PS	PVC
Ethanol (96%)	PR	PR	R	PR	R	PR	R
Formaldehyde (10%)	PR	R	R	R	R	PR	R
Formic acid (3%)	PR	R	R	R	R	R	R
Formic acid (50%)	NR	PR	R	-	R	PR	R
Formic acid (98-100%)	NR	PR	R	-	R	PR	PR
Formic acid (98-100%)*	NR	NR	R	-	PR	NR	NR
Hydrochloric acid (0.4%)	-	R	R	R	R	-	R
Hydrochloric acid (2%)	NR	R	R	R	R	-	-
Hydrochloric acid (5%)	NR	R	R	R	R	R	R
Hydrochloric acid (10%)	-	R	R	R	R	R	R
Hydrochloric acid (20%)	NR	PR	R	R	R	R	R
Hydrochloric acid (35-36%)	NR	NR	R	NR	R	PR	R
Hydrochloric acid (35-36%)*	NR	NR	R	NR	R	PR	PR
Hydrofluoric acid (4%)	NR	PR	PR	NR	R	R	R

Hydrofluoric acid (40%)	NR	PR	R	NR	R	-	-
Hydrofluoric acid (48-50%)	NR	NR	R	NR	R	NR	R
Hydrofluoric acid (48-50%)*	NR	NR	R	NR	R	NR	PR
Hydrofluoric acid (70%)	NR	NR	-	NR	R	R	R
Hydrofluoric acid (100%)	NR	NR	-	NR	R	-	-
Hydrogen peroxide (0.5%)	NR	R	R	R	R	-	R
Hydrogen peroxide (1%)	-	R	-	R	-	-	-
Hydrogen peroxide (3%)	NR	R	R	R	R	R	R
Hydrogen peroxide (30%)	NR	R	R	NR	R	R	R
Hydrogen peroxide (90%)	NR	R	R	R	R	R	NR
Hydrogen peroxide (90%)*	NR	R	R	-	PR	R	NR
Nitric acid (0.1%)	PR	R	R	-	R	-	R
Nitric acid (2%)	NR	R	R	NR	R	-	-
Nitric acid (10%)	NR	R	R	PR	R	R	R
Nitric acid (20%)	-	R	R	R	PR	R	R
Nitric acid (50%)	NR	NR	PR	R	PR	NR	R
Nitric acid (70%)	NR	NR	PR	NR	NR	NR	NR
Nitric acid (70%)*	NR	NR	NR	NR	NR	NR	NR
Nitric acid (100%)	NR	NR	NR	NR	NR	-	NR
Perchloric acid (20%)	NR	PR	-	-	R	NR	-
Perchloric acid (70%)	NR	NR	R	-	NR	NR	R
Perchloric acid (70%)*	NR	NR	NR	-	NR	NR	NR
Potassium hydroxide (1%)	R	PR	R	NR	R	R	R
Potassium hydroxide (10%)	R	NR	R	NR	R	-	-
Potassium hydroxide (30%)	R	NR	R	NR	R	R	R
Potassium hydroxide (50%)	R	NR	R	NR	R	R	R

Potassium hydroxide (50%)*	PR	NR	R	NR	R	R	PR
Sulphuric acid (2%)	NR	R	R	R	R	-	R
Sulphuric acid (30%)	-	R	R	R	R	R	R
Sulphuric acid (60%)	NR	PR	R	-	R	R	R
Sulphuric acid (80%)	NR	PR	R	NR	R	PR	R
Sulphuric acid (95-98%)	NR	NR	PR	NR	PR	NR	PR
Sulphuric acid (95-98%)*	NR	NR	NR	NR	NR	NR	NR
Sodium hypochlorite (15%)	NR	R	R	R	R	R	R
Sodium hypochlorite (15%)*	NR	PR	PR	-	NR	PR	R
Sodium hydroxide (1%)	R	PR	R	R	R	R	R
Sodium hydroxide (10%)	-	NR	R	R	R	R	R
Sodium hydroxide (30%)	R	NR	R	NR	R	R	R
Sodium hydroxide (50%)	R	NR	R	NR	R	R	R
Sodium hydroxide (50%)*	-	NR	R	NR	R	R	R

Supplementary References

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