water

MDPI

Supporting Information

The Salinity Difference and Clay Mineral Types Affect the Distribution of Microplastics in the Seabed: New Evidence from the Western North Yellow Sea

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Text S1 Configure the flotation solution

Saturated NaCl solution: Dissolve NaCl in a 10 L beaker until fully saturated (the density reaches 1.2 g/cm^3); To remove any interference from MP particles, pump the saturated NaCl solution into a filter through a peristaltic pump for filtration. The filter membrane in the filter was a nitrate fiber filter membrane with a pore size of 5 μm (Whatman AE 98, Germany). Once filtered, pour the solution into a 30 L container and seal it for storage.

Saturated NaI solution: The saturation density is 1.8 g/cm^3, and the other steps are the same as the configuration method for the saturated NaCl solution.

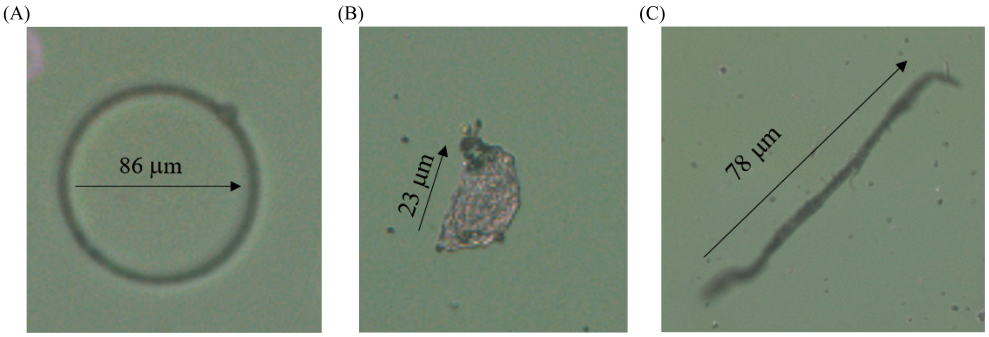


Figure S1. Laser infrared imaging of different forms of microplastics: (A) Pellet; (B) Fragment; (C) Fiber.

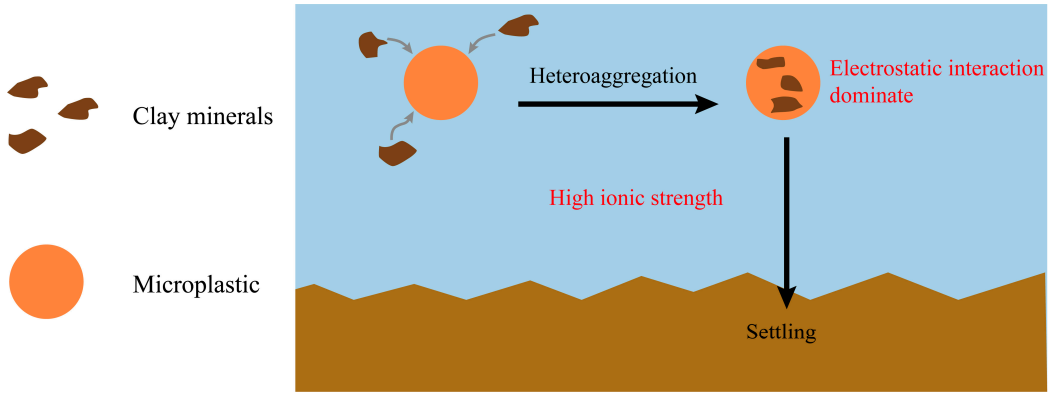


Figure S2. Mechanism of clay mineral-mediated MP aggregation under high ionic strength condition..

Table S1. Specific data on the abundance, size and form of microplastics.

Site	Number (items/gDW)	10-30μm (%)	30-50μm (%)	50-100μm (%)	>100μm (%)	Pellet (%)	Fragment (%)	Fiber (%)
A1	120	70.00%	30.00%	0.00%	0.00%	65.00%	35.00%	0.00%
A2	138	65.22%	34.78%	0.00%	0.00%	17.00%	83.00%	0.00%
A3	24	75.00%	25.00%	0.00%	0.00%	100.00%	0.00%	0.00%
A4	600	64.00%	23.00%	7.00%	6.00%	45.00%	51.00%	4.00%
A5	60	20.00%	40.00%	30.00%	10.00%	20.00%	80.00%	0.00%
B1	726	74.38%	22.31%	3.31%	0.00%	53.00%	47.00%	0.00%
B2	114	73.68%	15.79%	10.53%	0.00%	47.00%	53.00%	0.00%
B3	118.5	68.35%	25.32%	6.33%	0.00%	46.00%	53.00%	1.00%
B4	54	55.56%	22.22%	22.22%	0.00%	67.00%	33.00%	0.00%
B5	1134	83.60%	15.87%	0.53%	0.00%	44.00%	56.00%	0.00%
C1	582	72.16%	23.71%	3.09%	1.03%	85.00%	15.00%	0.00%
C2	330	41.82%	40.00%	12.73%	5.45%	4.00%	95.00%	2.00%

C3	132	38.64%	39.77%	19.32%	2.27%	48.00%	52.00%	0.00%
C4	426	67.61%	26.76%	5.63%	0.00%	69.00%	31.00%	0.00%
C5	552	57.61%	38.04%	4.35%	0.00%	72.00%	28.00%	0.00%
D1	132	54.55%	40.91%	4.55%	0.00%	59.00%	41.00%	0.00%
D2	702	61.54%	29.06%	9.40%	0.00%	62.00%	38.00%	0.00%
D3	408	67.65%	26.47%	4.41%	1.47%	41.00%	57.00%	1.00%
D4	240	47.50%	40.00%	12.50%	0.00%	40.00%	57.00%	3.00%
D5	210	85.71%	14.29%	0.00%	0.00%	51.00%	49.00%	0.00%

Table S2. Specific data on MPs with different materials.

Material	Number (item)	Proportion	Mean grain size (μm)
Acrylonitrile butadiene	15	0.85%	30
Cellulose acetate	1	0.06%	41.98
Ethylene vinyl acetate	3	0.17%	62.21
HDPE	15	0.85%	52.09
Methyle cellulose	56	3.18%	30.38
Polyacrylamide	16	0.91%	30.03
Polyamide	302	17.16%	31.41
Polycarbonate	18	1.02%	35.7
Polyether	24	1.36%	37.66
Polyethylene	106	6.02%	30.43
Polyethylene chlorinated	147	8.35%	28.33
Polyethylene terephthalate	58	3.30%	41.43
Polyimide	4	0.23%	28.49
Polylactic acid	13	0.74%	33.17
Polymethyl methacrylate	6	0.34%	28.45
Polypropylene	76	4.32%	34.5
Polystyrene	2	0.11%	47.43
Polysulfones	7	0.40%	24.69
Polytetrafluoroethylene	19	1.08%	54.04
Polyurethane	95	5.40%	27.36
Polyvinyl alcohol	467	26.53%	33.93
Polyvinyl chloride	219	12.44%	28.3
Rubber	31	1.76%	27.48
Vinyl chloride	60	3.41%	31.43