

Supplementary Table S1 Overview over the microfiber pollution in global coastal seawater

Location	MP abundance (n/m ³)	Microfiber contribution(%)	MP color	References
Haikou Bay, Chian	0.26–0.84 (0.44 ± 0.21)	83.1	Black (71.44%) Red (12.07%) White (7.66%) Transparent (51.9 %)	[1]
Xiamen Bay, China	0.14–5.68	21.96	White (26.18 %) Green (14.62 %) Blue (0.89 %) Yellow (2.3 %)	[2]
Weihai, China	(5.9 ± 3.5)	28.2	transparent, white, black, red, yellow, blue, and green	[3]
Jiaozhou Bay, China	(46 ± 28)	77.14	Blue (43.75 %) Black (40.63 %)	[4]
South Yellow Sea	(530)	91.2	Transparent (73.9%)	[5]
Northwestern South China Sea	/	100	Blue (59.66%) Black (28.98%)	[6]
Zhongsha Atoll, South China Sea	/	100	Transparent (63.4%)	[7]
Gulf of Thailand	200–8500	80	Blue (40%) Transparent (23%)	[8]
Baltic Sea	/	100	Transparent, gray, blue Black (38%)	[9]
Argentina's sea	/	100	Blue (22%) Red(16%)	[10]
Burdwood Bank	/	100	Transparent, blue, gray (82%)	[11]
Brazil, Western equatorial Atlantic	0.02	80	Blue, white, black	[12]
Western Mediterranean Sea	0.19–19.32 (3.52 ± 8.81)	44	Blue (35%) White (32%)	[13]
Qatar Seas	/	100	Blue	[14]
South-eastern coastline of South Africa.	257.9–1215	>90	Blue, black, red	[15]
Cape Town, South Africa	(150 ± 10)	94	Black (36.18 %) Blue (33.10 %)	[16]
Northern coast of Kerala	(39.9 ± 41.2)	93.8	Black (27.3 %) Blue (22.9 %) Red (21 %)	[17]
Plymouth, UK	0.26–0.68	52		[18]

References

- (1) Qi H, Fu D, Wang Z, Gao M, Peng L. Microplastics occurrence and spatial distribution in seawater and sediment of Haikou Bay in the northern South China Sea. *Estuarine, Coastal and Shelf Science*. **2020**, 239, 106757.
- (2) Sun J, Tian Y, Liu S, Lin H, Du R et al, Microplastic pollution threatens coastal resilience and sustainability in Xiamen City, China. *Marine Pollution Bulletin* **2023**, 187, 114516.
- (3) Zhang X, Li S, Liu Y, Yu K, Zhang H et al, Neglected microplastics pollution in the nearshore surface waters derived from

- coastal fishery activities in Weihai, China. *Science of the Total Environment* **2021**, 768, 144484.
- (4) Zheng Y, Li J, Cao W, Liu X, Jiang F et al, Distribution characteristics of microplastics in the seawater and sediment: A case study in Jiaozhou Bay, China. *Sci. Total Environ.* **2019**, 674, 27-35.
 - (5) Jiang Y, Zhao Y, Wang X, Yang F, Chen M et al, Characterization of microplastics in the surface seawater of the South Yellow Sea as affected by season. *Science of the Total Environment* **2020**, 724, 138375.
 - (6) Wang X, Zhu L, Liu K, Li D, Prevalence of microplastic fibers in the marginal sea water column off southeast China. *Science of the Total Environment* **2022**, 804, 150138.
 - (7) Liu S, Pan YF, Li HX, Lin L, Hou R et al. Microplastic pollution in the surface seawater in Zhongsha Atoll, South China Sea. *Science of the Total Environment* **2022**, 822, 153604.
 - (8) Prarat, P, Hongsawat, P. Microplastic pollution in surface seawater and beach sand from the shore of Rayong province, Thailand: Distribution, characterization, and ecological risk assessment. *Marine Pollution Bulletin* **2022**, 174, 113200.
 - (9) Bagaev, A, Mizyuk, A, Khatmullina, L, Isachenko, I, Chubarenko, I. Anthropogenic fibres in the Baltic Sea water column: Field data, laboratory and numerical testing of their motion. *Science of the Total Environment* **2017**, 599-600, 560-571.
 - (10) Ronda, A. C, Arias, A. H, Oliva, A. L, Marcovecchio, J. E. Synthetic microfibers in marine sediments and surface seawater from the Argentinean continental shelf and a Marine Protected Area. *Marine Pollution Bulletin* **2019**, 149, 110618.
 - (11) Di Mauro, R, Castillo, S, Pérez, A, Iachetti, C. M, Silva, L, Tomba, J. P, Chiesa, I. L. Anthropogenic microfibers are highly abundant at the Burdwood Bank seamount, a protected sub-Antarctic environment in the Southwestern Atlantic Ocean. *Environmental Pollution* **2022**, 306, 119364.
 - (12) Garcia TM, Campos CC, Mota EMT, Santos NMO, Campelo RPS et al, Microplastics in subsurface waters of the western equatorial Atlantic (Brazil). *Marine Pollution Bulletin* **2020**, 150, 110705.
 - (13) Fagiano V, Alomar C, Compa M, Soto-Navarro J, Jordá G et al, Neustonic microplastics and zooplankton in coastal waters of Cabrera Marine Protected Area (Western Mediterranean Sea). *Science of the Total Environment.* **2022**, 804, 150120.
 - (14) Castillo AB, Al-Maslamani I, Obbard JP, Prevalence of microplastics in the marine waters of Qatar. *Marine Pollution Bulletin* **2016**, 111 (1), 260-267.
 - (15) Nel HA, Froneman PWA, quantitative analysis of microplastic pollution along the south-eastern coastline of South Africa. *Marine Pollution Bulletin.* **2015**, 101 (1), 274-279.
 - (16) Ariefdien R, Pfaff M, Awe A, Sparks C, Stormwater outlets: A source of microplastics in coastal zones of Cape Town, South Africa. *Marine Pollution Bulletin* **2024**, 198, 115800.
 - (17) Anu Pavithran, V. Study on microplastic pollution in the coastal seawaters of selected regions along the northern coast of Kerala, southwest coast of India. *J. Sea Res.* **2021**, 173, 102060.
 - (18) Higgins, C, Turner, A. Microplastics in surface coastal waters around Plymouth, UK, and the contribution of boating and shipping activities. *Science of the Total Environment.* **2023**, 893, 164695.