
Plastitar: A new plastic formation that threatens coastal marine environments

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Abstract

Nowadays, pollution by microplastics (MPs) constitutes one of the most important environmental problems around the world, being especially visible in the oceans. In recent years, the presence of new plastic formations has been observed as a result of the combination of these materials with others such as rocks, wood or algae, whose effects on marine ecosystems have yet to be determined (1). In this sense, the presence of tar on coasts around the world has historically been a major problem, since it can adhere to rocks, covering large areas and retaining other materials such as plastic.

In this work, the presence of a new type of plastic formation, named here for the first time as "plastitar", was studied during January 2022 in Playa Grande (Tenerife, Canary Islands), a microplastics hotspots of the archipelago (2). In order to characterize plastitar, the degree of coverage was evaluated using 20 x 20 cm quadrants, observing that plastitar covered a 56% of the sampled area. Microplastics collected from each quadrant were classified according to their shapes and colours, as well as based on their chemical composition, which was determined by Fourier-transform infrared spectroscopy. Also tar was analysed using a gas chromatograph coupled to a flame ionization detector. The results revealed that plastitar is mainly composed of tar and microplastics (mainly fragments, pellets and lines) of polyethylene and polypropylene, and to a lesser extent, natural elements such as rocks, sand and wood residues. The physicochemical characteristics of plastitar may increase the degradation time of microplastics and, consequently, their effects on marine ecosystems, making it necessary to carry out further studies on its presence and impact on other coasts of the world (3).

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1. *Sci. Total Environ.*, 2021, **754**, 142216.
2. *Mar. Pollut. Bull.*, 2019, **146**, 26–32.
3. *Sci. Total Environ.*, 2022, **839**, 156261.

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