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# Microplasticrusts on the remote Trindade Island - Brazil

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## Abstract

The global microplastic pollution achieved alarming levels posing challenges and affecting not only ecological or chemical systems, but also geological systems. In this scenario, recent studies have indicated the relationship between plastics and other marine litter items and geology, resulting in new terms such as plastiglomerates, pyroplastics, anthropoquinas and plasticrusts, being the latter described as partially melted plastic fragments encrusting to rock surfaces. A sample of remobilized sandstone pebble with a micro fraction of plasticrusts, we termed them as microplasticrusts, has been found on the remote Trindade Island (Brazilian offshore territory on the South Atlantic Ocean) at the Tartarugas (Turtles) Parcel beach. The microplasticrusts of the sampled pebble has been quantified and characterized according to size, color and overall texture. The microplasticrusts are a type of pollution that encrusted on surface and the texture (filling holes) of the sandstone, < 1 mm to 5 mm in diameter, green color, has a smooth surface with silky shine typical of melted plastic. We quantified 39 microparticles of plasticrusts on the sample described (a 5 cm-long and 3 cm-wide rounded sandstone). Although plasticrusts were originally described in the Madeira Island, the fact that this type of pollution could be found in nearly unpopulated (such as Trindade Island), remote rock shows their relevance. In addition, the fact that this plastic was strongly adhered to the surface may increase its preservation potential over time. On the other hand, if it eventually gets loose, it will be a direct source of microplastics for the adjacent area. The presence of plastics – both macro and micro – interacting with the geological system reflects how ubiquitous plastic pollution is and may strengthen the arguments for a possible formalization of the Anthropocene.

**Keywords:** Plastic litter, Microplastic, Geological System

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