

## Detection, Isolation, and Characterization of Microplastics in Commercial Salt Samples sold in Bangalore

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**Abstract**

Over the past few decades, microplastics have been globally recognized as a prevailing contaminant in marine, freshwater, as well as terrestrial ecosystems. The recent study about the all-pervasive nature of microplastics creates an alarming situation for the researchers to know about the ill effects, and ingestion of microplastics in humans. Though there are multiple ways for humans to get exposure to microplastics, salt is one of the unavoidable food ingredients that does not have any other alternative. The substantial evidence for the presence of microplastics in salt has been already established, but the extraction, quantification, and characterization of microplastics are yet challenging. In this work, we addressed this research gap by using a polarization microscope to characterize different microplastics. Commercial salt samples analyzed including sea salts, rock salts, and pink salts have been purchased from the local market. Total solid substances (TSS) were separated from soluble salt through the chemical digestion method and filtration. The extracted particles have been characterized through a polarization microscope, and the chemical confirmation of the particles was done through FTIR spectroscopy. Rock salts and pink salts were more abundant with TSS than sea salts. Four out of seven salt samples were found contaminated with microplastics. Polyethylene, Nylon, Polycarbonates, and Mixed microplastics were the prominent microplastics isolated and characterized.

**Keywords**

Microplastics, Polarized Microscope, FTIR spectroscopy.