

## **Investigation of Microplastics in Organized Industrial Zones and Specific Industrial Wastewaters**

Microplastics (MPs) are a growing concern of governments as well as academic and environmental organizations due to their ease of transportation between environmental systems, increasing numbers and ability to transport other contaminants. In the last decades, plenty of studies focused on the wastewater treatment plants (WWTPs) as a contributor of MPs in the environment arising from the domestic activities. However industrial wastewater treatment plants (IWWTPs) and Organized Industrial Zones (OIZs) have not been studied as much as their domestic counterparts. Several studies focusing on IWWTPs and OIZs have demonstrated that industrial wastewaters have the capacity to surpass domestic wastewaters in terms of MPs pollution. With this hypothesis, this study aimed to analyze MPs in two different OIZs in Turkey, Ankara and two selected industries from each OIZ for their plastic use and wastewater generation. OIZs were selected among the largest production and wastewater generation capacities in Ankara and in terms of operating IWWTPs. Samples are collected from the discharge point of OIZ-A, inlet, outlet, and selected points of OIZ-B WWTP as well as discharge points of selected industries and inlet of their pretreatment plants if applicable. It has been found that MPs concentration varied between non-existent to 104 MP/L in wastewaters and highest at sludge as 183 MP/g TS with a large variety of common polymer types, shapes and sizes. Results showed that having a WWTP made a difference in discharges and showed that OIZs can be important contributors of MPs pollution in the environment.

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