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Abstract

In recent years, the diverse industrial practices and human inputs widely disseminated emerging contaminants (ECs) throughout environmental matrices, which is of great concern. Even at low concentrations, ECs pose major ecological problems and threaten human health and the environment's biota. Consequently, people's interest and concerns on the widespread dissemination of environmentally connected ECs of great concern as developed due to their scientific understanding, technical innovation, and socioeconomic awareness. Increased detection of contaminants may occur from climatic, socioeconomic, and demographic changes and the growing sensitivity of analytical techniques. Hence, this article reviews the determination of ECs in ecological specimens, from aquatic setup (river water, marine water, and wastewater), sludge, soil, sediment, and air. Sample collection and the quality measures are summarized. The preparation of samples, including extraction and cleanup and the subsequent instrumental analysis of ECs, are all covered. Traditional and recent extraction and cleanup applications to analyze ECs in samples are reviewed here in this paper. The detection and quantification of ECs using gas chromatography (GC) and liquid chromatography (LC) linked with various detectors, particularly mass spectrometry (MS), is also summarized and explored, as are other possible techniques. This study aims to give readers a more excellent knowledge of how new and improved approaches are being developed and serve as a resource for researchers looking for the best method for detecting ECs in their studies.

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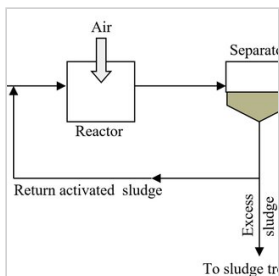
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