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Multielemental Characterization of Airborne Particulate Matter Collected in Bucharest and Tokushima by Inductively Coupled Plasma Mass Spectrometry and Inductively Coupled Plasma Atomic Emission Spectrometry

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Airborne particulate matter (PM) collected in Bucharest (Romania) and Tokushima (Japan) was comprehensively characterized through multielemental analysis by ICP-MS to the PM samples. Prior to an elemental characterization of the sample, a multielemental determination method composed of acid digestion (HClO₄/HNO₃/HF or H₂O₂/HNO₃/HF) and inductively coupled plasma mass spectrometry/inductively coupled plasma atomic emission spectrometry (ICP-MS/ICP-AES) was established to analyze a certified reference material of vehicle exhaust matter (NIES No. 8) for verifying the method. As the results, 39 elements in the certified reference material could be determined. They were a good agreement with the certified and reference values for HClO₄/HNO₃/HF acid digestion.

Chalcophile elements, such as cadmium, antimony, and lead in Bucharest showed higher enrichment factors than those in Tokushima.



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