Analysis of Platinum Group Elements in road dust CRM using the Agilent 8800 Triple Quadrupole ICP-MS in MS/MS mode

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Abstract

The monitoring of Platinum Group Elements (PGEs: Ru, Rh, Pd, Os, Ir and Pt), Au and Ag has become of great interest in the environmental field as their presence in the environment has increased since the introduction of automobile catalytic converters. Thanks to its high sensitivity and multi-element capability, ICP-MS is widely used for quantitation. However, the analysis of PGEs is challenging due to low content in soil and dust samples and severe interferences from the matrix. To remove the multiple and complex interferences on PGEs, the Agilent 8800 Triple Quadrupole ICP-MS (ICP-QQQ) was used in MS/MS mode, using ammonia as the reaction gas. A certified reference material of road dust was provided after mineralization to evaluate the quantitation capabilities. HMI (high matrix introduction) technology allows samples with higher Total Dissolved Solids (TDS) to be analyzed. This enables lower concentrations to be measured as further dilution is not required and also eliminates the risk of contamination from a dilution step

Keywords: Platinum group elements, PGE, ICP, MS/MS, road dust

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