DETERMINATION OF PT, PD AND RH IN REFERENCE MATERIALS BY INDUCTIVELY COUPLED PLASMA-MASS SPECTROMETRY AFTER ULTRASOUND-ASSISTED ACQUA REGIA LEACHING

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The interest in the determination of the platinum group elements Pt, Pd and Rh in environmental samples has increased over the last years because these elements are released to the environment as a result of automotive catalytic converters abrasion and deterioration. The analysis of Pt, Pd and Rh in environmental samples such as soils, sediments and plants, requires sensitive and reliable analytical methods, since their concentration levels are in general of ng g^{-1}. To validate analytical methodologies, platinum group elements (PGE) reference materials should be analysed in order to verify repeatability and reproducibility limits of the procedure. In this study, Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) after *acqua regia* leaching in an ultrasonic bath was used to determine Pt, Pd and Rh in the reference materials SARM 7 (platinum ore, SACCRM), UMT-1 (ultramafic ore tailings, CANMET) and BCR 723 (road dust, IRMM). The analyses were performed by using an HR-ICP-MS Instrument, Element, Finnigan MAT. Spectral and matrix interferences were considered and corrected. The detection limits (3σ) obtained were 0.1 ng g-1 for Pd and 0.2 ng g-1 for Pt and 0.1 ng g-1 for Rh. The results of the analysed reference materials showed good reproducibility with R.S.D.s < 18% for UMT-1, < 8% for SARM 7 and < 10% for BCR-1. Concentrations of the certified elements were within the uncertainty range, except Pd in BCR-1, which was below the lower limit.