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ABSTRACT

A procedure for the determination of ultratrace levels of lead and cadmium using dispersive liquid–liquid microextraction followed by electrothermal atomic absorption spectrometry (ETAAS) has been developed. The ionic liquid, 1-octyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide ($[C_8MIm][NTf_2]$), is formed *in situ* and used to extract the lead and cadmium complexes with ammonium pyrrolidinedithiocarbamate. The very fine droplets of ($[C_8MIm][NTf_2]$) allow effective dispersion without the need for organic solvents. After centrifugation, the concentrations of lead and cadmium in the sedimented phase can be determined by ETAAS. Using a 10 mL aqueous sample, the enrichment factor of the procedure was 280 and detection limits of 0.2 and 3 ng L^{-1} were obtained for cadmium and lead, respectively. The relative standard deviations for 10 replicates at the 10 ng L^{-1} cadmium and 0.2 µg L^{-1} lead levels were 6.5 and