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## Aspects concerning the heavy metal analysis in samples with difficult matrix

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**Abstract.** The determination of the metals content in highly loaded samples with complex matrix is always difficult because of interferences affecting the results of the analysis. The present study was worked out on soil samples from steel loading berths, the metal content being determined using the FAAS technique. This type of samples is very rich in Fe, Si and Al, but it also contains heavy metals in low concentrations (Cr and Ni). Because of the presence of Si in the samples, the use of HF at digestion is compulsory; it proved to be benefic for the digestion of soil samples, in general, since the metal content was found higher in samples treated with HNO<sub>3</sub>+HCl+HF, comparing with those treated with HNO<sub>3</sub>+HCl in the standard method, due to the complete digestion of the sample. The heavy metals Ni and Cr were determined at concentrations close to the detection limit. Making-up a matrix with 0.2 g/L Fe and 0.02 g/L Si and 0.002 g/L Al for the standard curves of minor elements (Ni, Cr), the influence of major elements (Fe, Si, Al) on the analysis result was investigated. Also, the determination of minor elements Cr and Ni was checked by addition of 0.2 g/L of each metal to the samples, so that the concentration would be found in the middle concentration range of standard curves. The conclusions of the study confirm the modifications proposed to the standard method applied to the soil samples proceeding from steel loading berths.

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