

Water Pollution.
Determination of Cd, Pb, Cu And Zn In Water by GF-AAS and F-AAS

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Water pollution is any chemical, physical or biological change in the quality of water that has harmful effect on any living thing that drinks or uses or lives (in) it. The pieces of heavy metal originating from our environment, our fillings, our diet, can be so minuscule that they can easily become embedded inside some tissue in the body. The metal could be located inside the liver, for instance, the kidneys, the heart, just about anywhere in the body.

There are several classes of water pollutants. If the first are disease-causing agents, such as bacteria and viruses also the toxic metals (including the heavy metals) take an important place in what that means major water pollutants wich make water unfit to drink and may cause, in large amount, the death of acvatic life.Examples of point sources of toxic metals in waste, we remind nonferrous metal procesing plants, underground mines, etc.

The parameters established for potable and surface waters are based on national regulations (recomended by E.U. Giudelines) or international standards.In this way in potable water for Copper the maximum admitted level is 2.0 mg/l, for Cadmium 0,005mg/l and for Lead 0.01 mg/l, in accordance whit Council Directive 98/83/EC on the quality of water, adopted on 3 November 1998.For surface water, in accordance with Romanian law, the maximum permissible concentrations for metals are: Copper 8 µg/l, Cadmium 0.5 µg/l, Lead µg/l and Zinc 25 µg/l.

The analytic technique to determine the four components from this matrix, being a quantitative method, involves aspects like: accuracy, specificity, standard deviation, detection limit, quantification, robustness, spike recovery, reproducibility, and all these representing performance parameters of the method. To validate the proposed method, adding a certified material of reference in the water was used.

The atomic absorbtion spectrometry is a quick, reliable method to determine micro and macro elements. The analytical performance of the method exceeds the requirements of the strictest international regulations any kind of water and thus provides a rugged method for this type of samples.