

## Summary

Ultratrace analysis requires the use of extremely clean reagents, including water. Quality of water used in laboratories is crucial element of obtained reliable results. In chemical and biological laboratories, as well as industry, distilled, re-distilled and deionized waters are used. Important factor of water quality is the content of inorganic ions. One of the most competitive analytical techniques for trace analysis of inorganic anions and cations is ion chromatography. In the work ion chromatographic method for the determination of common inorganic anions (fluoride, chloride, nitrate, phosphate and sulfate) and cations (lithium, sodium, ammonium, potassium, magnesium and calcium) in distilled, re-distilled and deionized water has been developed and validated.