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ISOTACHOPHORESIS

APPLICATION NOTE No. 29

ANALYSIS of CHROMATE in WASTE and SURFACE WATER on ppb LEVEL.

MAIN FEATURES :

Isotachophoresis is a suitable method for the simple and fast analysis of chromate in any sample **without the sample pretreatment**. Principle of this method is based on the electrophoretic separation of chromate from other anions in the preseparation and consequently in the analytical column. Due to UV detection in 405 nm detection is very specific because only a few anions can interfere. Specificity of the detection is increased by adding of the succinic acid as a „spacer“ to separate other potential interferents. **Detection limit is ca 1 – 2 ppb**. Time of analysis is ca 15 min.

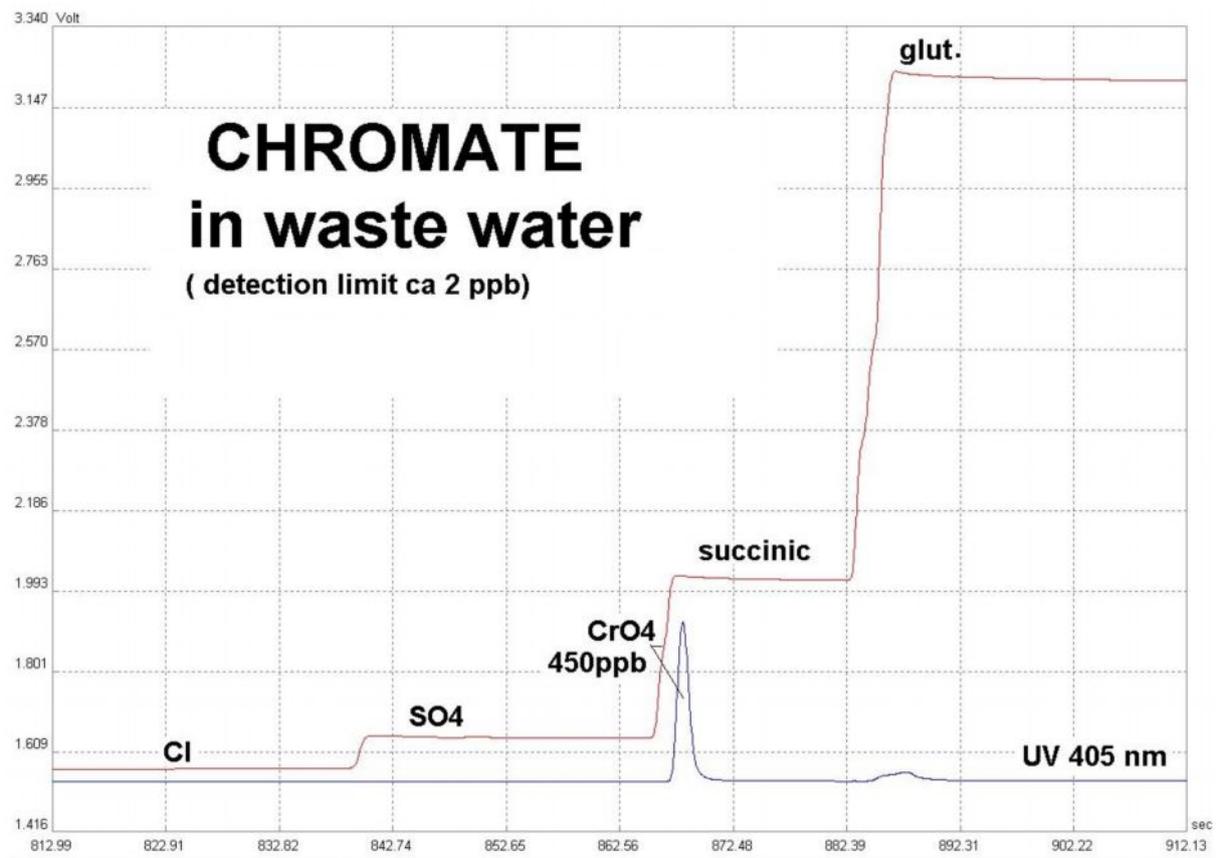


Fig. 1 : Analysis of waste water after washing of the chromate screws in hot water(4 cm sq. / 100 ml)

Conditions: leading electrolyte :
10 mM HCL + 20 mM histidine + 0.1% MHEC, pH=6.0
terminating electrolyte :
5 mM MES + HIS
V= 30 μ l; I₁=250 μ A (capillary 90/0.8mm); I₂=50 μ A (capillary 160/0.3mm)

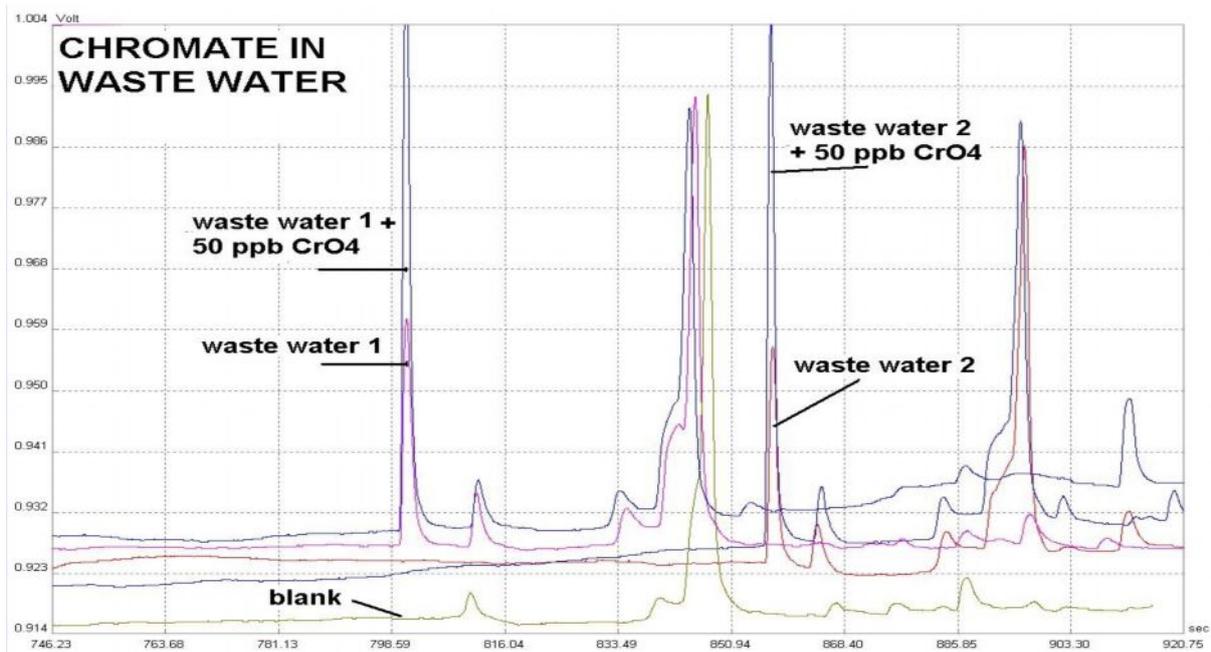


Fig.2. Analysis of industrial waste water after adding of 50 ppb of chromate. Conditions as Fig. 1.



Fig. 3. Determination of detection limit

The CZE and ITP analysers are produced by :
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