

## **DISTRIBUTION OF SOLUBLE AND INSOLUBLE CHEMICAL SPECIES OF CHROMIUM (III) AND (VI) IN AQUEOUS SOLUTIONS**

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**Abstract.** On the basis of currently revised thermodynamic data for Cr(III) and Cr(VI) hydrolysis and photolytic equilibria in addition to original thermodynamic and graphical approach, used in this paper, the repartition of their soluble and insoluble chemical species has been investigated. By means of the diagrams “ $\Delta G - \text{pH}$ ”, the areas of thermodynamic stability of chromium(III) hydroxide have been established for a number of the analytical concentration of Cr(III) in heterogeneous mixtures. The degree of polynuclearity for Cr (III) and Cr(VI) has been calculated for different initial composition of aqueous solutions. The diagrams of heterogeneous and homogeneous chemical equilibria have been used for graphical representation of complex equilibria in aqueous solutions containing Cr(III) and Cr(VI). The obtained calculated results correlate well with existing experimental data.

**Keywords:** chemical equilibrium, chromium complexes, distribution diagram, Gibbs energy.