

**THERMODYNAMIC STUDY OF ELECTROLYTES SOLUTIONS.
THERMODYNAMIC PROPERTIES OF AMMONIUM AQUEOUS
ELECTROLYTES SOLUTIONS FROM SOLUBILITY MEASUREMENT**

DR. RODICA SIRBU

Department of Physical - Chemistry, Faculty of Pharmacy "Ovidius"
University, Constantza, Blvd. Mamaia, nr 124, România, Tel.004041614576
int.37, Fax. 004041611607, e-mail rsirbur@gmb.ro

In a saturated aqueous solution, between the salt and the ions from from the solution an equilibrium is establishing at a certain temperature and pressure of 1 atmosphere. In the above conditions, the solid salt activity is conventionally equal to the unity and the solubility constant of the saturated solution takes the shape $ks=av^+ + av^-$.

Thus, results the evaluation possibility of the mean molal activity coefficient of a less soluble salt from a solution which contains also other electrolytes, with the condition of knowing the solubility product, ks and the solution mean ionic molality $m+$ at different compositons.

This method application of a less soluble electrolyte calculation in the presence of other electrolytes, will be obtained in binary, ternary and quaternary systems, with the calculation adaptation necessary for every solution type.

The present study sets off ammonium solutions thermodynamic treated - $(NH_4)_2S_2O_8 + (NH_4)_2S_2O_4 + (NH_4)_2SO_4 + H_2O$ - finalized by the calculation of the ammonium peroxidisulphate activity coefficients from solubility data.

The systems have been treated in succession, taking account of their complexity grade, following the γ values calculation for ammonium peroxidisulphate from the solutions of the mentioned type from the systems [3]

Keywords: solubility constant, activity coefficients, solubility data, ammonium solutions, thermodynamic properties of electrolytes solutions.

References

- [1] Hamed H. S., Owen B. B., The Physical Chemistry of Electrolyte Solutions, (1958);
- [2] Vilcu R., Irinei FL, Condei R., Bull. Inst. Pol. Bucuresti, XLII, 1980:
- [3] Sirbu R, Anal. Univ."Ovidius" Constanta, Seria III, 68-73, 1992.