THE STUDY OF THE PROPERTIES OF MIXED TELLURITES

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Tellurium is the most important element among the rare elements used in modern technology. The method of obtaining and the sphere of use allow producing new materials for chemical technology. Despite the less investigation of mixed compounds of tellurium, it is one of the components which is widely used as the basic components nowadays.

Synthesis of mixed tellurium containing compounds was carried out by the liquid phase method. "Chemically pure" brand La_2O_3, $Ba(NO_3)_2$ and H_2TeO_3 were taken as the starting materials. Experimental design was carried out by 5 factor plan with 4-level deviation factor.

The physical dependency of the correlation coefficient (R) and its value (tR) became known. The obtained approximation function was joined in the final equation. All data were calculated in three ways. They are: arithmetic, geometric and harmonic methods. The most significant were the average values of geometric. The final equations were selected equation with the largest nonlinear coefficient of multiple correlation. In this method, as the structural basis of using Latin squares are denoted the coordinates of the 16 experiments. The advantage of the fractional factorial experiment is to reduce the number of required experiments. The application of this experimental design ensures the statistical equivalence of the sample results at each level of the corresponding factor. Upon review of mathematical models of sediment yield one can conclude, that the degree of deposition of succinate of tellurium in the system La–Ba–Te is significantly affected by only the ratio of the initial concentrations of the Te/La and Te/Ba.

Chemical and emission-spectral analysis shows the corresponding theoretical values, the experimental results and the predictions.

References:

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