

## SIMULATOR OF THE BEHAVIOR OF CURIUM COMPOUNDS IN NaCl-2CsCl EUTECTIC

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### Abstract

Curium isotopes in nuclear spent fuel have a large heat generation and long half-life, so that's why it is necessary to separate them from highly active waste and then to transmute. Thermodynamic data of the formation oxygen and free-oxygen curium compounds are absent in molten chlorides.

In this work we have studied the chemical behaviour of various curium in NaCl-2CsCl eutectic and have drawn potential-oxoacidity-temperature diagram.

The investigations were carried out in the cell, containing two platinum-oxygen electrodes with solid electrolyte membranes. The electrodes were made from ZrO<sub>2</sub> membrane stabilized by Y<sub>2</sub>O<sub>3</sub> (Interbil S.A.). The first electrode is used as the indicating electrode for measuring the oxygen ions activity in the investigated melt and the second – as an oxygen pump. Sometimes BaO is used as the donor of the oxygen ions.

The reactions of interaction between compounds are the following:

