FC-1.1: ELECTROCHEMICAL SEPARATIONS

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The solubility limit of fission products in molten chloride salts becomes one limit that impacts the timing for salt treatment and recycle, or disposal. Solubility data as a function of temperature and composition is available for many binary and ternary chloride systems especially those that contain alkali and alkaline earth chlorides. However, similar data is lacking for complex multicomponent chloride salt systems especially those involving the lanthanide and actinide elements. We are seeking proposals to establish fundamental thermochemical data in chloride salt systems with an emphasis on multicomponent solubility of the fission product chlorides. Experimental work may be supplemented by thermodynamic data simulation to yield a more complete understanding and predictive models of the solid-liquid equilibria in the complex chloride systems.
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