

Trials of Plutonium Electro-refining in Calcium Chloride

Arfon Harris Jones*, Tim Paget, Robert Watson
Atomic Weapons Establishment
Aldermaston, Reading, Berkshire, RG74PR, UK

The AWE has recently investigated the use of CaCl_2 as an alternative to equimolar NaCl-KCl as the electrolyte used in Pu electro-refining. With good quality feed metal, efficiency has been increased by up to 15% and yielding product of similarly high purity.

Reported here are details of initial runs in CaCl_2 and a discussion of the observed improvements over the NaCl-KCl system. Also discussed will be details of poor runs in the new salt medium, the investigation of which has led to some insight into the electro-refining process.