

between the solid and vapor forms of AmF_3 and PuF_3 must either be negligible or very similar for both compounds.

(5) Steric effects. It is possible that the formation of higher complexes might be slightly subject to a steric hindrance, which would be more noticeable with the smaller ions of the heaviest actinide elements. In this connection it may be significant that the crystal structures of the sesquioxides, fluorides, chlorides, bromides and oxychlorides of the lanthanides all show a change, with a reduction in coordination number, somewhere in the middle of the series.²³ The coordination number is usually 9 for the lighter lanthanide elements, but drops to as low as 6 for the heaviest lanthanides. A change of coordination number (from 9 to 8) has been observed at neptunium in the actinide tribromide series.²⁴

It is worth pointing out that the lanthanide and actinide elements provide an excellent opportunity for the investigation of some of the more subtle aspects of chemical behavior. Small effects may be detected which would be hidden by larger differences in the comparison of less closely similar series of elements.

The authors would like to re-emphasize the existence of unpublished information relevant to the discoveries of elements 99 and 100, as was stated in references 1 and 2. Under these conditions it seems inappropriate to suggest names for the new elements here.