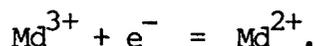


quickly performed, but the Md contains small amounts of Zn^{2+} from the Jones' Reductor and also Eu^{2+} , which was added prior to the elution to prevent reoxidation of Md^{2+} by the extractant.

The solution chemistry of the trivalent oxidation state has not been investigated beyond its behavior in the separation procedures described above. All observations indicate that Md^{3+} is a "normal" actinide with an ionic radius slightly less than that of Fm. As might be expected, attempts to oxidize Md^{3+} with sodium bismuthate failed to show any evidence for Md^{4+} .³

The divalent oxidation state was the first found for any member of the actinide series^{3,6} and, therefore, stirred a strong theoretical and experimental effort to establish the reasons for the unexpected stability of this state in Md, and subsequently, in the adjacent actinides. We shall summarize the interpretations for divalency in the heaviest actinides in a later section, but in this section, only the known properties of Md^{2+} will be presented.

In the earliest experiments with Md^{2+} , rough measurements were made of the reduction potential for the half-reaction



The first measurement gave a reduction potential of -0.2 V with respect to the standard hydrogen electrode.³ This value was obtained from determining the equilibrium concentration of each metal ion in the reaction



and then calculating the equilibrium constant. After entering the equilibrium constant into the Nernst equation, it was found that V^{3+} was a better reducing agent than Md^{2+} by about 0.07 V. In other experiments, Mály observed the