

ice bath just prior to and during precipitation. The LaF_3 was separated by centrifugation and was washed three times with water. The precipitate was transferred as a slurry to a platinum plate. It was then dried, ignited and subjected to alpha particle pulse analysis. A small amount of hydroxylamine hydrochloride and 200 micrograms of lanthanum were added to the supernatant and the solution heated at about 75°C . for 10 minutes. The lanthanum fluoride was subsequently treated in the same manner as the first lanthanum fluoride precipitate described above.

The activity of element 99 was distributed between the precipitate and the supernatant in exactly the same ratio as the curium; namely, approximately equal amounts in both fractions since the precipitation was not complete. Essentially all of the americium remained in the supernatant and was not carried in the first lanthanum fluoride precipitate.

Other Properties

The work performed in this laboratory in connection with separations of the new elements has involved primarily the use of combinations of precipitation and ion exchange methods. The latter have been described in preceding sections. It has been implied that the behavior of the new elements with carriers is the same as is observed with berkelium and californium.^{7,8} Nevertheless, it seems worthwhile to outline some of the general procedures involving carriers, and their combinations with ion exchange procedures which have been successfully used.