Title
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Publication Date
1952-04-23
UNIVERSITY OF CALIFORNIA
Radiation Laboratory
Contract No. W-7405-eng-48

UNCLASSIFIED

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Berkeley, California
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It has recently\(^1\) been reported that the elution of titanium


from a cation exchange resin with citrate solution has resulted in

broad elution bands with several peaks. This behavior was attributed

to the probable partial separation of the isotopes of titanium. Work

in this laboratory on the elution of niobium with hydrochloric acid

from an anion exchange resin, subsequent to that previously reported,\(^2\)

(2) E. H. Huffman, G. M. Iddings and R. C. Lilly, \textit{ibid.}, 72, 4474 (1951).

has shown a somewhat similar behavior, but under conditions which

precluded any possible isotope separation.

When carrier-free Nb\(^{95}\) prepared as described before,\(^2\) was

adsorbed from a 10.0 M hydrochloric acid solution on a Dowex 2 anion

exchange resin column, 8.0 cm long and 3.0 mm in diameter, and then

eluted with 7.0 M hydrochloric acid at the rate of about 2.4 ml per

hour, the elution curve shown in Fig. 1 was obtained. The possibility

of any foreign activity in the purified Nb\(^{95}\) accounting for three peaks

was eliminated by obtaining the decay rates of the samples taken at

the top of each peak. All three gave identical decay curves, corresponding
to the disintegration rate of Nb\textsuperscript{95}. When this experiment was repeated a somewhat different curve was obtained. Again three peaks were found, but these were rounded, and the areas under the first and third were approximately equal and greater than that of the second. Brown and Rieman\textsuperscript{1} also report that their elution bands were not exactly reproducible.

This departure from the expected type of elution band can probably be attributed to the slow establishment of equilibrium among various ionic species which are present. These ions would not necessarily have to have different charges, as in the case of the thiocyanate complexes of chromium,\textsuperscript{3} but may contain different numbers of chloro-, oxy- and hydroxy- groups. Elution with 6.0 M hydrochloric acid gives the usual symmetrical curve.

This work was done under the auspices of the Atomic Energy Commission.

\textsuperscript{3} E. L. King and E. B. Dismukes, \textit{ibid.}, 74, 1674 (1952).
COUNTS PER MINUTE PER 50 LAMBDA

MILLILITERS OF ELUTRIANT

FIG. 1

MU3505