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Cross sections for the ^{98}Mo(d,p) reaction for ^{99}Tc^m production[1]
P. CHODASH, C.T. ANGELL, J. BENITEZ, A. CZESUMSKA, E.B. NORMAN, H. SHUGART, E. SWANBERG, H. YANG, UC Berkeley and LBNL, M. PEDRETTI, LLNL — There is currently a global shortage of ^{99}Tc^m, one of the most widely used medical isotopes. To alleviate this shortage, alternative methods for producing ^{99}Mo, the parent isotope, are being evaluated. One possible technique is the use of a cyclotron to produce ^{99}Mo via the ^{98}Mo(d,p) reaction. Existing data for this reaction only covers the energy range from 0.8 to 13 MeV.[2] This work extends cross section data up to 65 MeV in order to better evaluate cyclotron production of ^{99}Mo. The stacked foil activation technique was used to measure the cross sections. Targets consisted of alternate layers of natural molybdenum and aluminum metal foils. The aluminum was used as an energy degrader, recoil catcher, and for the determination of the beam current. Cross sections for the ^{98}Mo(d,p) reaction were determined from 10 MeV to 65 MeV using LBNL's 88-Inch Cyclotron. ^{99}Mo production was determined by observing the 739.5 keV gamma ray using a high purity germanium detector. Results of the experiment will be presented.

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[2]Z. Randa and K. Svoboda, *J. Inorg. Nucl. Chem.* **39** (1977) 2121

Eric Norman
Univ. of California, Berkeley

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