
 $^{181}\text{Ta}(^{48}\text{Ca}, ^{20}\text{C})$ **1991Or01,2012Ga45**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. S. Narijauskas, J. H. Kelley, C. G. Sheu		ENSDF	9-June-2017

1991Or01: The authors measured the masses of several nuclides, produced in the fragmentation of 55 MeV/nucleon ^{48}Ca ions on a 330 mg/cm² $^{\text{nat}}\text{Ta}$ target at GANIL, by measuring their time-of-flight over a roughly 80 meter flight path. The nuclides were detected and identified in the SPEG spectrometer focal plane. A mass resolution near 3×10^{-4} was achieved.

The mass excess $\Delta M=37.4$ MeV ⁴⁶ was deduced.

2012Ga45:

XUNDL set compiled by J.H. Kelley and C.G. Sheu 2012.

The authors fragmented a ^{48}Ca beam to produce a “cocktail” beam comprised of a variety of neutron rich nuclei. Then, by measuring the magnetic rigidity and time-of-flight (tof) through a well defined path, the mass of the various “coctail” beam components was determined.

A beam of $E=60$ MeV/nucleon ^{48}Ca was fragmented on a $^{\text{nat}}\text{Ta}$ target that was located between the SISSI solenoid spectrometers at GANIL. The ejectiles were transported 82 m to the focal plane of the SPEG spectrometer where they were identified by ΔE -E and their magnetic rigidity was determined. Furthermore their tof was measured for the path between the SPEG spectrometer and a micro-channel plate detector located after a set of dipole magnets that followed the production target. Two sets of field settings ($B\rho=2.4$ Tm and 2.88 Tm) were used to reduce systematic uncertainties.

Masses were determined for a set of calibration nuclei and nuclei of interest. The mass excess $\Delta M=37.36$ MeV ²⁷ was deduced from momentum and Time-of-Flight.

 ^{20}C Levels

E(level)	J^{π}
0	0^{+}