

$^9\text{Be}(^{197}\text{Au},\text{X})$ [2010Re07](#),[2012Re19](#)

| Type | Author | History | Citation | Literature Cutoff Date |
|-----------------|---|---------|-------------------|------------------------|
| Full Evaluation | J. C. Batchelder and A. M. Hurst, M. S. Basunia | | NDS 183, 1 (2022) | 1-Mar-2022 |

Schottky mass spectrometry technique used to measure masses directly and identify high-spin isomers.

$E=478\text{-}492$ MeV/nucleon from UNILAC-SIS facility at GSI. Target= ^9Be 1035 mg/cm² with a 221 mg/cm² niobium backing.

Mostly bare atoms of the highly-charged reaction products were separated with FRS and injected into storage ring ESR. The ions were stochastically and electron cooled. Deduced masses from Schottky spectra; identified high-spin isomer.

^{186}Ta in 72^+ charge state, i.e. hydrogen-like ion.

 ^{186}Ta Levels

| E(level) | $T_{1/2}$ | Comments |
|----------|---------------|--|
| 0.0 | >10 s | Number of ions detected=120. $T_{1/2}$: measured in 2010Re07 for hydrogen-like ^{186}Ta ion. |
| 336 20 | 3.0 min +15-8 | %IT>0; % β^- =? E(level): Based on measured mass difference between the isomer and g.s. (2010Re07). $T_{1/2}$: From 2012Re19 for hydrogen-like ^{186}Ta ion (assuming their earlier value 3.4 min +24-10 (2010Re07) has been superseded). Number of ions detected=60. Isomer to g.s. transitions were observed from the isomer, implying γ -ray emission. |