

Be($^{238}\text{U},\text{F}\gamma$) 2012Ka36,2015Lo04

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. Kumar(a), J. Chen(b) and F. G. Kondev		NDS 137, 1 (2016)	31-May-2016

2012Ka36: ^{109}Mo was produced in Be($^{238}\text{U},\text{F}$) reactions at E=345 MeV/nucleon at RIKEN. BigRIPS spectrometer was used to separate the recoiling nuclei, which were implanted into an aluminum stopper and surrounded by three Clover-type HPGe detectors. Measured: implant- γ (t).

2015Lo04: ^{109}Mo was produced in Be($^{238}\text{U},\text{F}$) reactions at E=345 MeV/nucleon at RIKEN. BigRIPS spectrometer was used to separate the recoiling nuclei, which were implanted into an active stopper consisting of 8 DSSDs, and surrounded by 84 HpGe detectors of the EURICA array. Measured: implant- β (t) and implant- $\beta\gamma$ (t).

 ^{109}Mo Levels

E(level) [†]	J ^π [‡]	T _{1/2} [‡]	Comments
0.0	(5/2 ⁺)	0.61 s +3-4	T _{1/2} : Other: 0.70 s +4-6 from implant- $\beta\gamma$ (t) in 2015Lo04.
69.7 5	(1/2 ⁺)	0.194 μs +76-49	The number of implanted ^{109}Mo nuclei in the isomeric state was 8.3×10^3 (2012Ka36). T _{1/2} : using 69.7 γ (t) in 2012Ka36. configuration: likely $\nu 1/2^+[411]$ orbital from the comparisons with neighboring nucleus ^{107}Mo (2012Ka36).

[†] From E γ .

[‡] From Adopted Levels, unless otherwise stated.

 $\gamma(^{109}\text{Mo})$

E γ [†]	E _i (level)	J _i ^π	E _f	J _f ^π	Mult.	α [‡]	Comments
69.7 5	69.7	(1/2 ⁺)	0.0	(5/2 ⁺)	[E2]	4.42 14	$\alpha(\text{K})=3.35$ 10; $\alpha(\text{L})=0.89$ 3; $\alpha(\text{M})=0.162$ 6; $\alpha(\text{N}+..)=0.0228$ 8 $\alpha(\text{N})=0.0223$ 8; $\alpha(\text{O})=0.000453$ 13

[†] From 2012Ka36.

[‡] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

Be($^{238}\text{U},\text{F}\gamma$) 2012Ka36,2015Lo04

Level Scheme

