

¹⁶⁸Ir α decay (159 ms) 2009Ha42,1996Pa01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen [#]		NDS 147, 1 (2018)	30-Nov-2017

Parent: ¹⁶⁸Ir: E=0+x; T_{1/2}=159 ms +16-13; Q(α)=6381 9; % α decay=77 9

¹⁶⁸Ir-E: x=50 250 (syst,2017Au03).

¹⁶⁸Ir-J^π: (9⁺) assigned in 2017Au03.

¹⁶⁸Ir-T_{1/2}: From ¹⁶⁸Ir Adopted Levels (2010Ba27), based on 161 ms 21 (1996Pa01), 160 ms +30-20 and 153 ms +40-30 (2009Ha42).

¹⁶⁸Ir-Q(α): From 2017Wa10.

¹⁶⁸Ir-% α decay: From ¹⁶⁸Ir Adopted Levels (2010Ba27) based on measurements of % α =75 11 in 2009Ha42, and 82 14 in 1996Pa01.

2009Ha42: ¹⁶⁸Ir source from α decay of ¹⁷²Au source produced in ⁹⁶Ru(⁷⁸Kr,pn) at E=342, 348 MeV. ⁷⁸Kr beam bombarded a 96% enriched self-supporting 0.50 mg/cm² ⁹⁶Ru target. A 50 μ g/cm² Carbon foil was placed downstream the beam. Experiments performed at JYFL facility. γ -rays were detected with the JUROGAM γ -ray detection system that consists of 43 EUROGAM escape-suppressed HPGe crystals. Two DSSDs of the GREAT spectrometer at the focal plane of RITU were used to detect the fusion-evaporation products. RITU also contains MWPC, segmented planar Ge, and a HPGe clover detectors. Measured E γ , I γ , $\gamma(\theta)$, E α , $\alpha\gamma$ coin, (recoil) α , (recoil) $\alpha\gamma$ coin, half-lives, α decay branching ratios.

1996Pa01: ¹⁶⁸Ir source from ¹¹²Sn(⁵⁸Ni,X),E=297 MeV. The half-life of 161 ms 21 was not correlated with any daughter activity but was correlated with the α decay of ¹⁷²Au.

¹⁶⁴Re Levels

E(level)	T _{1/2}	Comments
0+y 69.4+y	0.86 s +15-11	T _{1/2} : Measured in 2009Ha42.

α radiations

E α	E(level)	I $\alpha^{\dagger\ddagger}$	Comments
6260 10	69.4+y	71 7	% α =53 5 (2009Ha42).
6322 8	0+y	29 13	E α : weighted average of 6320 10 (2009Ha42) and 6323 8 (1996Pa01). Reduced α width=0.32 7 (1996Pa01) suggests hindered α decay. % α =22 10 (2009Ha42).

[†] Authors' values normalized to 100 (2009Ha42).

[‡] For absolute intensity per 100 decays, multiply by 0.77 9.

$\gamma(^{164}\text{Re})$

E γ	E _i (level)	E _f	Comments
69.4 4	69.4+y	0+y	69.4 γ seen in coin with 6260 α .

^{168}Ir α decay (159 ms) 2009Ha42,1996Pa01Decay Scheme