

<sup>167</sup>Os IT decay (700 ns) 2010Sc02

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen		NDS 191,1 (2023)	22-Aug-2023

Parent: <sup>167</sup>Os: E=434.3 11; J<sup>π</sup>=(13/2<sup>+</sup>); T<sub>1/2</sub>=700 ns 10; %IT decay=100

2010Sc02: <sup>92</sup>Mo(<sup>78</sup>Kr,2pnγ),E=357 and 365 MeV: measured half-lives of the g.s. and isomer by the detection of γ, x rays, ce, γγ-coin, α, and α-tagged γ-rays and ce using JUROGAM array of 43 escape suppressed EUROGAM phase-I and GASP type HPGe detectors, RITU separator for recoiling nuclei, and GREAT spectrometer. Recoil-decay tagging technique.

<sup>167</sup>Os Levels

E(level) <sup>†</sup>	J <sup>π</sup> <sup>‡</sup>	T <sub>1/2</sub>	Comments
0.0	(7/2 <sup>-</sup> )	839 ms 5	%α=51 5 (2010Sc02) T <sub>1/2</sub> : from 2010Sc02, measured from α-decay correlated with 3-s recoils. <a href="#">Additional information 1.</a>
86.7 8 434.3 11	(9/2 <sup>-</sup> ) (13/2 <sup>+</sup> )	700 ns 10	%IT=100 T <sub>1/2</sub> : from 2010Sc02, measured from time differences between recoil implantations and delayed γ rays detected in the GREAT focal plane spectrometer. Delayed γ rays were observed at 86.7 and 347.6 keV. Note that T <sub>1/2</sub> =672 ns 7 stated in level-scheme Fig. 11 of 2010Sc02 is a misprint, as communicated in an e-mail reply from C. Scholey to Balraj Singh on Feb 5, 2010.

<sup>†</sup> From E<sub>γ</sub> data.

<sup>‡</sup> From 2010Sc02 based on γ multiplicities deduced from measured ce data.

γ(<sup>167</sup>Os)

E <sub>γ</sub> <sup>†</sup>	I <sub>γ</sub> <sup>#</sup>	E <sub>i</sub> (level)	J <sub>i</sub> <sup>π</sup>	E <sub>f</sub>	J <sub>f</sub> <sup>π</sup>	Mult. <sup>‡</sup>	α <sup>@</sup>	I <sub>(γ+ce)</sub> <sup>#</sup>	Comments
86.7 8	10.56 27	86.7	(9/2 <sup>-</sup> )	0.0	(7/2 <sup>-</sup> )	M1	8.47 26	100	α(K)exp=7.0 1 (2010Sc02) α(K)=6.99 21; α(L)=1.144 35; α(M)=0.263 8 α(N)=0.0641 20; α(O)=0.01106 34; α(P)=0.000823 25 I <sub>γ</sub> : from I(γ+ce) and α. Other: relative I <sub>γ</sub> =16 2 (2010Sc02).
347.6 8	61.39 38	434.3	(13/2 <sup>+</sup> )	86.7	(9/2 <sup>-</sup> )	M2	0.629 10	100	α(K)exp=0.5 1 (2010Sc02) α(K)=0.493 8; α(L)=0.1036 17; α(M)=0.0246 4 α(N)=0.00604 10; α(O)=0.001033 17; α(P)=7.19×10 <sup>-5</sup> 12 I <sub>γ</sub> : from I(γ+ce) and α. Other: relative I <sub>γ</sub> =100 14 (2010Sc02).

<sup>†</sup> From 2010Sc02.

<sup>‡</sup> From 2010Sc02 based on measured ce data.

<sup>#</sup> Absolute intensity per 100 decays.

<sup>@</sup> 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.

**$^{167}\text{Os}$  IT decay (700 ns) 2010Sc02**Decay Scheme

Intensities:  $I_{(\gamma+ce)}$  per 100 parent decays  
%IT=100

## Legend

- $I_{\gamma} < 2\% \times I_{\gamma}^{max}$
- $I_{\gamma} < 10\% \times I_{\gamma}^{max}$
- $I_{\gamma} > 10\% \times I_{\gamma}^{max}$

