

$^{92}\text{Rh}$   $\varepsilon$  decay (0.53 s) 2004De40

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 113, 2187 (2012)	15-Sep-2012

Parent:  $^{92}\text{Rh}$ :  $E=0+y$ ;  $J^\pi=(2^+)$ ;  $T_{1/2}=0.53$  s 37;  $Q(\varepsilon)=11302$  5;  $\% \varepsilon + \% \beta^+$  decay=100.0

$^{92}\text{Rh}-Q(\varepsilon)$ : from 2011AuZZ; 11050 500 (2003Au03, from systematics).

$^{92}\text{Rh}-T_{1/2}$ : measured using a macrocycle of a beam-on period followed by a beam-off period, with on/off times tailored to suit the expected half-life of the isotope under study. A time-to-digital converter, started at the beginning of each macrocycle, recorded the time of each triggered event relative to the start.

$^{92}\text{Rh}$  source produced using the  $^{58}\text{Ni}(^{36}\text{Ar}^{10+}, \text{pn})$  reaction and  $E=120$  MeV At center of target after degradation of 135 MeV beam by Ta degraders to take advantage of the cross section maximum of  $368 \mu\text{b}$ ; recoils from target were stopped and neutralized by 500 mbar of purified Ar gas; reaction products selectively ionized according to Z, using two dye lasers tuned to the resonant atomic transitions of Rh to strongly enhance its ionization and extraction; laser-ionized nuclei guided towards the LISOL mass separator by a sextupole ion guide; 2 HPGe detectors arranged in compact configuration around  $\beta$ -sensitive plastic  $\Delta E$ -E detectors enclosing the tape station; measured  $E_\gamma$  ( $E < 4$  MeV),  $I_\gamma$ ,  $\gamma\gamma$  coin,  $\beta\gamma$  coin,  $T_{1/2}(^{92}\text{RH})$ .

The decay scheme is from 2004De40.

A calculation of feeding to the observed levels based on  $I(\gamma^\pm)$  after correction for contributions from other  $\alpha=92$  nuclides indicates feeding to the g.s. and first  $2^+$  state of  $^{92}\text{Ru}$  As well As to  $(6^+)$  and  $(8^+)$  levels In  $^{92}\text{Ru}$ . Additionally, 2004De40 find evidence for two half-life components in the time behaviour of the 866 $\gamma$ . 2004De40 interpret this as evidence for the existence of both low-spin and high-spin states in  $^{92}\text{Rh}$  source.

 $^{92}\text{Ru}$  Levels

$E(\text{level})^\dagger$	$J^\pi^\ddagger$	Comments
0.0	$0^+$	$I(\gamma+\text{ce})=77$ 23, $\log ft=4.6$ deduced by 2004De40, inconsistent with a $\Delta J=2$ , $\Delta\pi=\text{No}$ branch; probably $I(\gamma+\text{ce})$ is significantly overestimated.
865.7 1	$(2^+)$	$I(\gamma+\text{ce})=23$ 10, $\log ft=4.9$ deduced by 2004De40; probably unreliable due to incompleteness of the decay scheme.

$^\dagger$  From  $E_\gamma$ .

$^\ddagger$  From Adopted Levels.

 $\gamma(^{92}\text{Ru})$ 

$E_\gamma^\dagger$	$I_\gamma^\dagger$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult. $^\ddagger$
865.7 1	100	865.7	$(2^+)$	0.0	$0^+$	(E2)

$^\dagger$  From 2004De40.

$^\ddagger$  From Adopted Gammas.

---

 **${}^{92}\text{Rh}$   $\epsilon$  decay (0.53 s) 2004De40****Decay Scheme**Intensities: Relative  $I_\gamma$ 