

$^{175}\text{Au}$   $\alpha$  decay (201 ms) 2013An10,2017Ba46

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin, E. A. Mccutchan		NDS 151, 334 (2018)	30-Jun-2018

Parent:  $^{175}\text{Au}$ :  $E=0.0$ ;  $J^\pi=(1/2^+)$ ;  $T_{1/2}=201$  ms 3;  $Q(\alpha)=6583$  4;  $\% \alpha$  decay=90 7

$^{175}\text{Au}$ - $T_{1/2}$ : weighted average of 200 ms 3 (2017Ba46) and 207 ms 7 (2013An10). Other: 160 ms 5 (2002Ro17).

$^{175}\text{Au}$ - $\% \alpha$  decay: From 2013An10 through a comparison of number of  $\alpha$  decays of  $^{179}\text{Tl}$  and  $^{175}\text{Au}$ .

2017Ba46:  $^{175}\text{Au}$  source from  $^{179}\text{Tl}$   $\alpha$  decay produced in  $^{104}\text{Pd}(^{78}\text{Kr},p2n)$ , with  $E(^{78}\text{Kr})=358$  MeV, followed by mass separation using the RITU separator. Measured  $E\alpha$ ,  $I\alpha$ ,  $\alpha(t)$  using two DSSD detectors.

2013An10:  $^{175}\text{Au}$  source from  $^{179}\text{Tl}$   $\alpha$  decay produced in spallation of  $\text{UC}_x$  target with 1.4 GeV proton beam followed by mass separation. Measured  $E\alpha$ ,  $I\alpha$ ,  $\alpha(t)$  using Windmill system comprised of two annular Si detectors and a rotating disk.

2002Ro07:  $^{175}\text{Au}$  from  $^{179}\text{Tl}$   $\alpha$  decay produced by bombardment of 90.4% enriched  $^{102}\text{Pd}$  targets with  $^{78}\text{Kr}$ ,  $E=340$  MeV (mid-target) enriched  $^{102}\text{Pd}$  targets with  $^{78}\text{Kr}$ ,  $E=340$  MeV (mid-target); gas-filled separator, two parallel-plate avalanche counters (PPACs), Si strip detector in focal plane, tof measured between PPAC and focal plane detector; two HPGe detectors near focal plane to measure  $\gamma$  and x rays; measured  $E\alpha$  (FWHM=35 keV), parent-daughter (or granddaughter) correlations; deduced  $T_{1/2}$  ( $^{171}\text{Ir}$ ), corrected for random correlation rates.

 $^{171}\text{Ir}$  Levels

E(level)	$J^\pi$	Comments
0.0	(1/2 <sup>+</sup> )	$J^\pi$ : from the Adopted Levels.

 $\alpha$  radiations

$E\alpha$	E(level)	$I\alpha^\ddagger$	HF <sup>†</sup>	Comments
6433 4	0.0	100	2.59 23	$E\alpha$ : from 2013An10 and 2017Ba46. Other: 6412 (2002Ro17), uncertainty unstated by authors. The $\alpha$ in 2002Ro17 is tentatively attributed to $^{175}\text{Au}$ decay based on correlation with 5717 $\alpha$ from $^{171}\text{Ir}$ .

<sup>†</sup> From  $r_0=1.56$  l (based on  $r_0$  for  $^{170}\text{Os}$ ,  $^{172}\text{Os}$ ,  $^{170}\text{Pt}$ ,  $^{172}\text{Pt}$  obtained from 1998Ak04),

<sup>‡</sup> For absolute intensity per 100 decays, multiply by 0.90 7.