

$^{155}\text{Lu}$   $\alpha$  decay (138 ms)    [1991To08](#),[1989Ho12](#),[1993Li34](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 110, 1 (2009)	20-Nov-2008

Parent:  $^{155}\text{Lu}$ : E=20 6;  $J^\pi=1/2^+$ ;  $T_{1/2}=138$  ms 8;  $Q(\alpha)=5802.7$  26;  $\% \alpha$  decay=76 16

$^{155}\text{Lu}$ -Energy,  $J^\pi$ ,  $T_{1/2}$  and related comments are taken from A=155 evaluation ([2005Re01](#)).

$^{155}\text{Lu}$ -E: from the energy differences of the relevant  $\alpha$  transitions in the  $\alpha$  decay chain headed by  $^{167}\text{Ir}$  ([1997Da07](#)). [1996Pa01](#) report 71 keV 3 for this level energy.

$^{155}\text{Lu}$ - $J^\pi$ : member of a sequence, headed by  $^{167}\text{Ir}$ , of favored  $\alpha$  transitions connecting  $\pi s_{1/2}$  states ([1997Da07](#)).

$^{155}\text{Lu}$ - $T_{1/2}$ : weighted average of: 140 ms 20 ([1991To09](#)); 136 ms 9 ([1996Pa01](#)); and 150 ms 24 ([1997Da07](#)).

$^{155}\text{Lu}$ - $\% \alpha$  decay:  $\% \alpha=76$  16 ([1997Da07](#)).

[1997Da07](#): measured  $T_{1/2}$ ,  $\alpha$  branching ratio.

[1996Pa01](#): measured  $E\alpha$ ,  $T_{1/2}$ .

[1991To08](#) (also [1991To09](#)): source produced by  $^{94}\text{Mo}(^{64}\text{Zn},x)$  and  $^{96}\text{Mo}(^{64}\text{Zn},x)$  reactions followed by mass separation. Measured  $\alpha$ .

[1989Ho12](#): source produced by  $^{102}\text{Pd}(^{58}\text{Ni},X)$  reaction and mass separation. Measured  $\alpha$ .

$T_{1/2}$  for 5579  $\alpha$  group=140 ms 20 ([1991To08](#),[1991To09](#)), 136 ms 9 ([1996Pa01](#)).

$E\alpha=5584$  5 ([1996Pa01](#)), 5579 5 ([1993Li34](#),[1991To08](#)), 5575 10 ([1989Ho12](#)).

See [1993To07](#) for discussion of the assignment of low spin ( $s_{1/2}, d_{3/2}$ ) to the g.s. and high spin ( $h_{1/2}$ ) to the isomer at  $\approx 21$  keV in  $^{155}\text{Lu}$ . In some earlier papers (see [1991To08](#) for example) reverse ordering had been suggested.

[1996Bu35](#): calculated  $T_{1/2}$ .

 $^{151}\text{Tm}$  Levels

E(level)	$J^\pi$	Comments
0.0+x	(1/2 <sup>+</sup> )	E(level): $x \approx 50$ keV ( <a href="#">1990Ak01</a> ). $J^\pi$ : from 'Adopted Levels'.

 $\alpha$  radiations

$E\alpha$	E(level)	Comments
5581 5	0.0+x	$E\alpha$ : from weighted average of 5584 5 ( <a href="#">1996Pa01</a> ), 5579 5 ( <a href="#">1993Li34</a> , <a href="#">1991To08</a> ) and 5575 10 ( <a href="#">1989Ho12</a> ).