

^{25}F β^- decay 2005Pa74,1999Re16

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	R. B. Firestone	NDS 110, 1691 (2009)	1-Feb-2008

Parent: ^{25}F : $E=0$; $J^\pi=5/2^+$; $T_{1/2}=80$ ms 9; $Q(\beta^-)=1.338\times 10^4$ 10; $\% \beta^-$ decay=100.0

1999Re16: Produced by $\text{Ta}(^{36}\text{S},x)$, $E(^{36}\text{S})=2.8$ GeV. Magnetic spectrometer (LISE3). Measured TOF, $E\Delta E$ in Si, $\beta\gamma$ coincidence.

2005Pa74: Produced by $\text{Be}(^{48}\text{Ca},x)$, $E(^{48}\text{Ca})=140$ MeV/A. Fragment separator, double sided Si microstrip detector, segmented Ge array. Measured TOF, $E\gamma$, $I\gamma$, $\gamma\gamma$ - and $\beta\gamma$ -coincidence.

 ^{25}Ne Levels

E(level)	J^π	$T_{1/2}$
0	$1/2^+$	602 ms 8
1702.8 7	$(5/2,3/2)^+$	
2090 5	$(3/2,5/2)^+$	
3316.4 11		
3324 5	$(3/2,5/2,7/2)^+$	
3891.2 12	$(3/2,5/2,7/2)^+$	

 β^- radiations

E(decay)	E(level)	$I\beta^-$ ^{†‡}	Log ft
(9.49×10^3) 10	3891.2	24 4	4.6 1
(1.006×10^4) 10	3324	19 2	4.8 1
(1.006×10^4) 10	3316.4	<7	>5.3
(1.129×10^4) 10	2090	10 2	5.3 1
(1.168×10^4) 10	1702.8	18 4	5.2 1

[†] 2005Pa74 report 6(5)% feeding to the 1703 level and 20(20)% feeding to the GS. This is inconsistent with the intensity balance through the 1703 level, which is expected to be fed by allowed beta decay, and inconsistent with any second forbidden beta feeding to the GS.

[‡] Absolute intensity per 100 decays.

 $\gamma(^{25}\text{Ne})$

$I\gamma$ normalization: from measured β and γ rates.

E_γ [†]	I_γ ^{†@}	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
574.7 5	14 3	3891.2	$(3/2,5/2,7/2)^+$	3316.4		
1234 [‡] 5	8 [#] 3	3324	$(3/2,5/2,7/2)^+$	2090	$(3/2,5/2)^+$	
1613.4 12	17 3	3316.4		1702.8	$(5/2,3/2)^+$	
1622 [‡] 5	11 [#] 3	3324	$(3/2,5/2,7/2)^+$	1702.8	$(5/2,3/2)^+$	
1702.7 7	56 4	1702.8	$(5/2,3/2)^+$	0	$1/2^+$	
2090 [‡] 5	18 3	2090	$(3/2,5/2)^+$	0	$1/2^+$	I_γ : From intensity balance assuming beta feeding of 2005Pa74.
2188.6 13	10 3	3891.2	$(3/2,5/2,7/2)^+$	1702.8	$(5/2,3/2)^+$	

[†] From 1999Re16 except as noted.

[‡] From 2005Pa74, 5-keV uncertainty assumed by the evaluator.

Continued on next page (footnotes at end of table)

${}^{25}\text{F}$ β^- decay **2005Pa74,1999Re16 (continued)**

$\gamma({}^{25}\text{Ne})$ (continued)

Estimated by the evaluator from the γ -ray spectrum (2005Pa74).

@ Absolute intensity per 100 decays.

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Decay Scheme

Intensities: I_γ per 100 parent decays

Legend

