^{25}Si β^+ decay 2004Th09

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

Parent: ^{25}Si: E=0.0; $J^\pi=5/2^+$; $T_{1/2}=220$ ms *3*; $Q(\beta^+)=12740$ *10*; $\%\beta^+$ decay=100.0

2004Th09: Source produced by projectile fragmentation of a 95 MeV/α ^{36}Ar beam on a ^{12}C target. Mass separation ΔE(Si)-TOF.

Other references: 1990Ga17, 1992Ha28, 1993Ro06, 1996Og01.

^{25}Si also decays to ^{24}Mg by εp.

^{25}Al Levels

E(level)	J^π	$T_{1/2}$[†]	Comments
0	$5/2^+$	7.183 s *12*	
452	$1/2^+$		
945	$3/2^+$		
1613	$7/2^+$		
2672 *1*	$3/2^+$		
3844 *7*	$5/2^+$		
4189 *2*	$3/2^+$		
4582 *2*	$5/2^+$		
4908 *6*	$5/2^+,7/2^+$		
5597 *6*		56 keV *20*	
5802 *4*	$5/2^+$		
6170 *2*	$3/2^+$		
6620 *9*	$5/2^+$		
6871 *8*			
7107 *3*	$3/2^+$	33 keV *5*	
7255 *7*	$5/2^+$		
7678 *7*	$(3/2,5/2,7/2)^+$		
7892 *2*	$(3/2,5/2,7/2)^+$		T=3/2
8193 *6*	$(3/2,5/2,7/2)^+$	20 keV *20*	
9073 *7*	$(3/2,5/2,7/2)^+$		

[†] From 1992Ha28. Values adopted where level scheme agrees with 2004Th09.

ε,β^+ radiations

E(decay)	E(level)	$I\beta^+$[†]	$I\varepsilon$[†]	Log *ft*	$I(\varepsilon+\beta^+)$[†]	Comments
(3667 *12*)	9073	0.21 *4*	0.00040 *8*	4.32 *10*	0.21 *4*	av Eβ= 1170 *6*; εK= 0.001734 *12*; εL= 1.539×10^{-04} *10*
(4547 *12*)	8193	1.20 *20*	0.00097 *16*	4.12 *9*	1.2 *2*	av Eβ= 1592 *6*; εK= 0.000737 *4*
(4848 *10*)	7892	12.8 *8*	0.0081 *5*	3.25 *3*	12.8 *8*	av Eβ= 1737 *5*; εK=0.0005775 *24*
(5062 *12*)	7678	0.34 *6*	1.8×10^{-04} *3*	4.93 *9*	0.34 *6*	av Eβ= 1841 *6*; εK=0.0004913 *24*
(5485 *12*)	7255	1.0 *6*	0.00040 *24*	4.7 *4*	1.0 *6*	av Eβ= 2047 *6*; εK=0.0003656 *16*
(5633 *11*)	7107	3.70 *20*	0.00135 *7*	4.16 *3*	3.7 *2*	av Eβ= 2119 *5*; εK=0.0003319 *12*
(5869 *13*)	6871	0.50 *10*	1.6×10^{-04} *3*	5.13 *10*	0.5 *1*	av Eβ= 2235 *6*; εK=0.0002862 *12*
(6120 *14*)	6620	0.16 *7*	4.3×10^{-05} *19*	5.7 *3*	0.16 *7*	av Eβ= 2358 *7*; εK=2.464×10^{-04} *11*
(6570 *10*)	6170	0.32 *6*	6.7×10^{-05} *13*	5.60 *9*	0.32 *6*	av Eβ= 2578 *5*; εK= 1.918×10^{-046}
(6938 *11*)	5802	1.70 *10*	0.000295 *17*	5.00 *3*	1.7 *1*	av Eβ= 2759 *5*; εK= 1.585×10^{-045}
(7143 *12*)	5597	0.56 *11*	8.8×10^{-05} *17*	5.55 *10*	0.56 *11*	av Eβ= 2860 *6*; εK= 1.433×10^{-045}
(7832 *12*)	4908	0.60 *20*	6.9×10^{-05} *23*	5.74 *18*	0.6 *2*	av Eβ= 3200 *6*; εK= 1.045×10^{-043}
(8158 *10*)	4582	3.2 *3*	0.00032 *3*	5.11 *5*	3.2 *3*	av Eβ= 3361 *5*
(8551 *10*)	4189	2.99 *3*	0.000254 *3*	5.25 *1*	2.99 *3*	av Eβ= 3555 *5*
(8896 *12*)	3844	0.40 *10*	3.0×10^{-05} *7*	6.21 *13*	0.4 *1*	av Eβ= 3726 *6*

Continued on next page (footnotes at end of table)

^{25}Si β^+ decay 2004Th09 (continued)

ϵ,β^+ radiations (continued)

E(decay)	E(level)	Iβ^+[†]	Iε[†]	Log *ft*	I($\varepsilon+\beta^+$)[†]	Comments
(10068 *10*)	2672	4.8 *3*	2.37×10^{-04} *15*	5.42 *3*	4.8 *3*	av Eβ= 4307 *5*
(11127 *10*)	1613	15 *3*	0.00053 *11*	5.16 *10*	15 *3*	av Eβ= 4833 *5*
(11795 *10*)	945	26 *4*	0.00076 *12*	5.05 *7*	26 *4*	av Eβ= 5165 *5*
(12740 *10*)	0	25 *7*	0.00057 *16*	5.24 *14*	25 *7*	av Eβ= 5635 *5*

[†] Absolute intensity per 100 decays.

$\gamma(^{25}Al)$

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
452	18.4 *42*	452	1/2$^+$	0	5/2$^+$	
493	15.3 *34*	945	3/2$^+$	452	1/2$^+$	
945	10.4 *23*	945	3/2$^+$	0	5/2$^+$	
1612	14.7 *32*	1613	7/2$^+$	0	5/2$^+$	I$_\gamma$: Corrected for intensity of 1611.7-keV impurity from ^{25}Mg.

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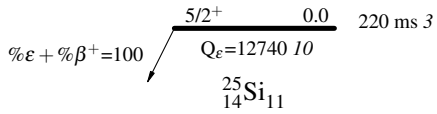
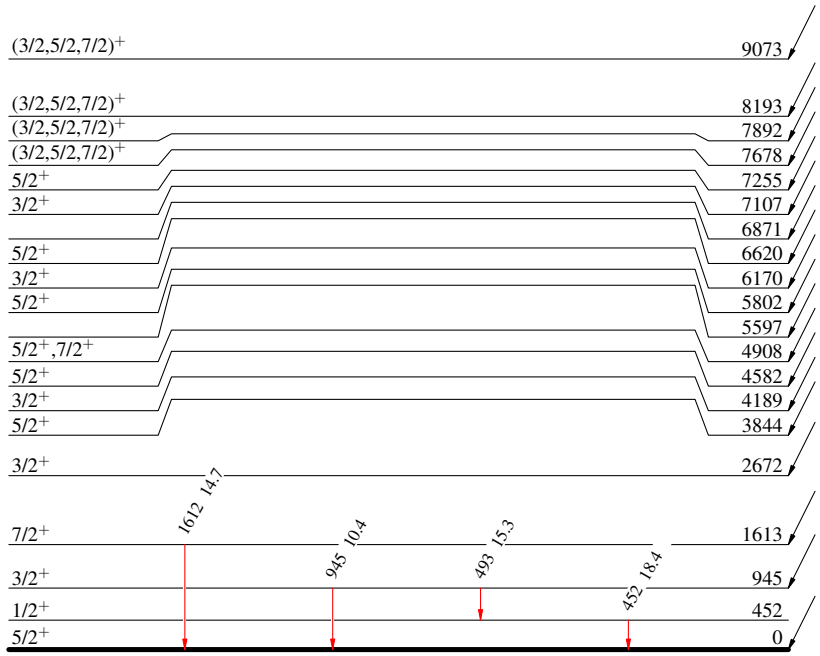
Decay Scheme

Intensities: Type not specified

Legend

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





		Iβ+	Iε	Log *ft*
		0.21	0.00040	4.32
20 keV *20*		1.20	0.00097	4.12
		12.8	0.0081	3.25
		0.34	0.00018	4.93
		1.0	0.00040	4.7
33 keV *5*		3.70	0.00135	4.16
		0.50	0.00016	5.13
		0.16	0.000043	5.7
		0.32	0.000067	5.60
		1.70	.000295	5.00
56 keV *20*		0.56	0.000088	5.55
		0.60	0.000069	5.74
		3.2	0.00032	5.11
		2.99	0.000254	5.25
		0.40	0.000030	6.21
		4.8	0.000237	5.42
		15	0.00053	5.16
		26	0.00076	5.05
7.183 s *12*		25	0.00057	5.24

$^{25}_{13}Al_{12}$