^{34}P β^- decay (12.43 s) 1973Go33

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Ninel Nica, Balraj Singh	NDS 113, 1563 (2012)	28-May-2012

Parent: ^{34}P: E=0.0; $J^\pi=1^+$; $T_{1/2}$=12.43 s *10*; Q(β^-)=5382.96 *81*; %β^- decay=100.0

^{34}P-Q(β^-): From 2011AuZZ; others: 5374 *5* (2003Au03).

1973Go33: ^{34}P produced by the reaction ^{18}O(^{18}O,np) E=42 MeV. Used Ge(Li) detector and measured $\beta\gamma$-coin, Eγ, Iγ, $T_{1/2}$, Iβ.

1971Wa04: ^{34}P produced by the reaction ^{34}S(n,p) E=14.8 MeV. Used Ge(Li) and NaI(Tl) detectors for γ rays and plastic detector for β rays. Measured $T_{1/2}$, Eγ, Iγ, Eβ, Iβ.

Other: 1946Bl01.

Energy balance: total decay energy of 5386 keV *102* deduced (using RADLIST code) from proposed decay scheme is in agreement with the expected value of 5383 keV *1*, indicating that decay scheme is complete.

^{34}S Levels

E(level)†	J^π†	$T_{1/2}$
0.0	0^+	stable
2127.564 *13*	2^+	
3916.408 *21*	0^+	
4074.667 *14*	1^+	
4114.813 *23*	2^+	

† From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-†	Log *ft*	Comments
(1268.1 *8*)	4114.813	0.31 *6*	4.88 *9*	av Eβ=493.96 *37*
(1308.3 *8*)	4074.667	0.111 *23*	5.38 *9*	av Eβ=511.91 *37*
(1466.6 *8*)	3916.408	0.045 *17*	5.98 *17*	av Eβ=583.30 *39*
(3255.4 *8*)	2127.564	14.8 *20*	4.93 *6*	av Eβ=1427.46 *39* Iβ^-: other: 15 *2* (1971Wa04).
(5383.0 *8*)	0.0	84.8 *21*	5.159 *12*	av Eβ=2464.61 *40* Iβ^-: other: 85 *2* (1971Wa04).

† Absolute intensity per 100 decays.

$\gamma(^{34}S)$

Eγ†	Iγ‡#	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.†	δ†
1788.794 *20*	0.3 *1*	3916.408	0^+	2127.564	2^+	E2	
1947.060 *20*	0.28 *10*	4074.667	1^+	2127.564	2^+	M1+E2	+1.3 *+9−32*
1987.19 *3*	0.87 *13*	4114.813	2^+	2127.564	2^+	M1+E2	−0.40 *5*
2127.499 *20*	100.0 *3*	2127.564	2^+	0.0	0^+	E2	
4074.418 *20*	0.46 *6*	4074.667	1^+	0.0	0^+	D	
4114.52 *4*	1.2 *2*	4114.813	2^+	0.0	0^+	E2	

† From Adopted Gammas.

‡ From 1973Go33.

For absolute intensity per 100 decays, multiply by 0.15 *2*.

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Decay Scheme

Intensities: I_γ per 100 parent decays