^{46}Cl β^-n decay 2004Mr01,2003Gr22

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. W. Burrows	NDS 109, 171 (2008)	30-Oct-2007

Parent: ^{46}Cl: E=0.0; $T_{1/2}$=223 ms *37*; Q(β^-n)=6.99×10^3 *72*; %β^-n decay=60 *9*

^{46}Cl-E,$T_{1/2}$: From the ^{46}Cl Adopted Levels In 2000Wu08.

^{46}Cl-Q(β^-n): From 2003Au03.

^{46}Cl-%β^-n decay: From the ^{46}Cl Adopted Levels In 2000Wu08.

Be(^{48}Ca,X) E=60 MeV/A. LISE3 spectrometer At GANIL used to select ^{44,45,46}Cl isotopes that were purified by Wien-Filter. Isotopes implanted into double-sided Si detector with 16×16 strips of 3 mm Γ. Detected β^-′s (2 plastic scintillators), γ′s and $\gamma\gamma$-coincidences (2 coaxial 70% HPGe and 1 EXOGAM four-fold clover clover detector), N′s (TONNERRE array), and nγ-coincidences.

^{45}Ar Levels

E(level)†	J$^\pi$‡	$T_{1/2}$	Comments
0.0	7/2$^-$	21.48 s *15*	%β^-=100 $T_{1/2}$,%β^-: from the Adopted Levels.
542.6 *9*	(3/2$^-$)		
1340.2 *9*	(3/2$^-$)		
1416.6 *13*			
1770.6 *13*			

† From least-squares fit to Eγ′s assuming ΔE(γ)=1 keV (evaluator).

‡ As quoted by 2004Mr01. Not adopted by the evaluator.

γ(^{45}Ar)

E$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.†	α#	Comments
542.7‡	542.6	(3/2$^-$)	0.0	7/2$^-$	(E2)	3.84×10^{-4} *5*	α=3.84×10^{-4} *5*; α(K)=0.000352 *6*; α(L)=2.90×10^{-5} *5*; α(M)=2.82×10^{-6} *5*
797.7‡	1340.2	(3/2$^-$)	542.6	(3/2$^-$)			
874.0‡	1416.6		542.6	(3/2$^-$)			
1228.0‡	1770.6		542.6	(3/2$^-$)			
1340‡	1340.2	(3/2$^-$)	0.0	7/2$^-$			
x1346							
1416.1‡@	1416.6		0.0	7/2$^-$			

† From the Adopted Gammas.

‡ Also seen In ^{45}Cl β^- decay.

Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

@ Placement of transition in the level scheme is uncertain.

x γ ray not placed in level scheme.

^{46}Cl β^-n decay 2004Mr01,2003Gr22 (continued)

Delayed Neutrons (^{45}Ar)

Particle normalization: from the ^{46}Cl Adopted Levels In 2000Wu08.

E(n)	E(^{45}Ar)	E(^{46}Ar)
315	1340.2	9674
800	542.6	9360
1.13×10^3	542.6	9674
1500	542.6	10060

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Decay Scheme