^{22}Al εp decay:91.1 ms 2006Ac04

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	R. B. Firestone	NDS 127, 1 (2015)	15-Jan-2015

Parent: ^{22}Al: E=0; $J^\pi=4^+$; $T_{1/2}$=91.1 ms *5*; Q(εp)=13100 *SY*; %εp decay=54.5 *25*

^{22}Al-%εp decay: %εp=54.5 *25* (addition of all the observed proton branches).

^{22}Al isotope produced by fragmentation of 95 MeV/nucleon ^{36}Ar beam on a carbon target. Reaction products separated by LISE3 zero-degree achromatic recoil spectrometer.

Measured Eγ, Iγ, γγ, β, βγ coin, (delayed particles)γ coin, isotopic half-life. Detection system: two Si detectors, a Si(Li) detector and an EXOGAM Ge clover detector. Comparisons with shell-model calculations.

Other references: 1997Bl03,1982Ca16.

^{21}Na Levels

E(level)	J^π
0	$3/2^+$
332.0 *12*	$5/2^+$
1717.5 *18*	$7/2^+$
2830.4 *30*	$9/2^+$

γ(^{21}Na)

E_γ	I_γ †‡	E_i(level)	J_i^π	E_f	J_f^π
332.0 *12*	31.9 *15*	332.0	$5/2^+$	0	$3/2^+$
1112.9 *24*	0.35 *12*	2830.4	$9/2^+$	1717.5	$7/2^+$
1385.5 *13*	0.41 *12*	1717.5	$7/2^+$	332.0	$5/2^+$

† From β-delayed proton feeding intensity.

‡ Absolute intensity per 100 decays.

Delayed Protons (^{21}Na)

E(p)†	E(^{21}Na)	I(p)#	E(^{22}Mg)	E(p)†	E(^{21}Na)	I(p)#	E(^{22}Mg)
475 *8*	332.0	4.7 *6*	6307	3088 *8*	0	1.89 *7*	8589
721 *8*	0	7.4 *10*	6221	3484 *8*	0	2.18 *15*	8985
975 *8*	0	0.25 *5*	6476	4017 *8*	0	1.04 *33*	9518
1033 *8*	332.0	3.0 *3*	6865	4224 *9*	0	0.84 *11*	9725
1223 *8*	0	0.75 *10*	6724	4464 *8*	0	2.52 *14*	9965
1299 *8*	332.0	18.5 *17*	7132	4912 *10*	0	0.27 *32*	10413
1551 *10*	0	0.81 *16*	7052	5177 *13*	0	0.29 *11*	10678
1753 *8*	0	0.45 *8*	7254	5667 *8*	2830.4	0.35 *11*	14012‡‡
2072 *8*	0	0.48 *7*	7573	5808 *49*	0	0.2 *6*	11309
2503 *10*	0	0.64 *13*	8004	5909 *56*	0	0.2 *6*	11410
2583 *8*	332.0	4.89 *24*	8416	6774 *8*	1717.5	0.41 *12*	14012‡‡
2838 *8*	0	2.11 *9*	8339	7517 *11*	0	0.33 *7*	13018

† In c.m. system.

‡ 14012 *3* is the IAS of $^{22}Al_{g.s.}$

Absolute intensity per 100 decays.

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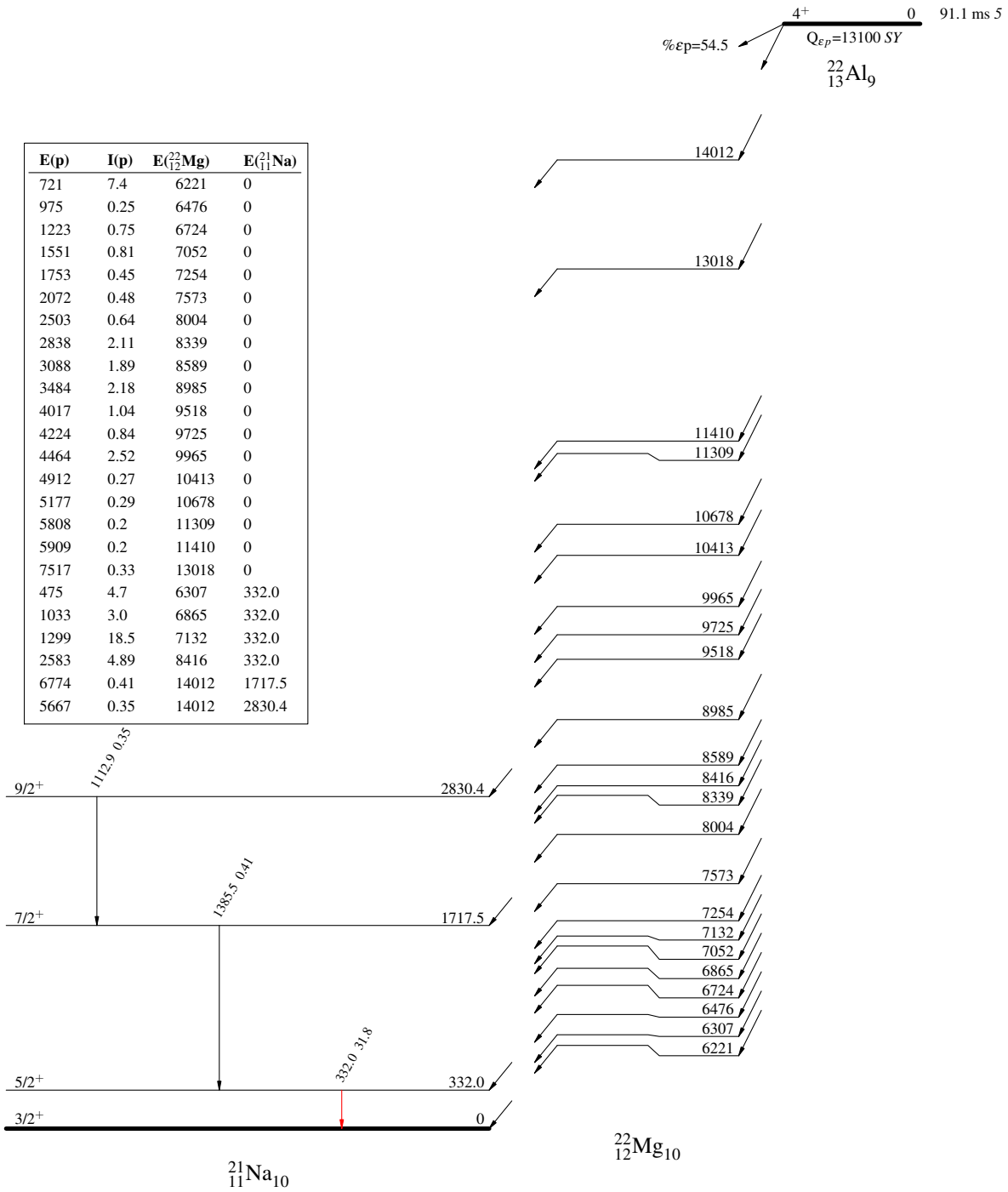
Decay Scheme

γ Intensities: I_γ per 100 parent decays
I(p) Intensities: I(p) per 100 parent decays



E(p)	I(p)	E($^{22}_{12}$Mg)	E($^{21}_{11}$Na)
721	7.4	6221	0
975	0.25	6476	0
1223	0.75	6724	0
1551	0.81	7052	0
1753	0.45	7254	0
2072	0.48	7573	0
2503	0.64	8004	0
2838	2.11	8339	0
3088	1.89	8589	0
3484	2.18	8985	0
4017	1.04	9518	0
4224	0.84	9725	0
4464	2.52	9965	0
4912	0.27	10413	0
5177	0.29	10678	0
5808	0.2	11309	0
5909	0.2	11410	0
7517	0.33	13018	0
475	4.7	6307	332.0
1033	3.0	6865	332.0
1299	18.5	7132	332.0
2583	4.89	8416	332.0
6774	0.41	14012	1717.5
5667	0.35	14012	2830.4