^{27}Mg β^- decay 1999Ha16,1969Bi06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 112,1875 (2011)	30-Nov-2010

Parent: ^{27}Mg: E=0.0; $J^\pi=1/2^+$; $T_{1/2}$=9.458 min *12*; Q(β^-)=2610.6 *6*; %β^- decay=100

Others: 1998Sh13, 1970Sk06, 1968Be38.

1999Ha16: ^{26}Mg0 target irradiated with thermal neutrons, ^{27}Mg chemically separated; $4\pi\beta$-γ coincidence apparatus consists of $4\pi\beta$ proportional counter and HPGe detector; Measured: Eγ, absolute Iγ and β^- feeding to levels.

1969Bi06: ^{27}Mg produced from ^{26}Mg(d,p) reaction; Ge(Li), NaI(Tl) detectors; Measured: Eγ, absolute Iγ, γ-β coincidence, deduced β^- feeding to ^{27}Al levels.

1968Be38: ^{27}Mg produced from ^{27}Al(n,p) reaction; Ge(Li) detector; Measured: Eγ, Iγ.

^{27}Al Levels

E(level)[†]	J^π[‡]
0.0	$5/2^+$
843.76 *9*	$1/2^+$
1014.56 *9*	$3/2^+$

† From a least-squares fit to γ-ray energies.
‡ From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-[†‡]	Log *ft*	Comments
(1596.0 *12*)	1014.56	29.06 *9*	4.9340 *16*	av Eβ=646.34 *28*
(1766.8 *12*)	843.76	70.94 *9*	4.7297 *10*	av Eβ=724.84 *28*

† From γ-ray transition intensity balance.
‡ Absolute intensity per 100 decays.

γ(^{27}Al)

Iγ normalization: normalization from decay scheme.

E$_\gamma$[†]	I$_\gamma$[‡#]	E$_i$(level)	J_i^π	E$_f$	J_f^π
170.82 *10*	0.86 *2*	1014.56	$3/2^+$	843.76	$1/2^+$
843.76 *10*	71.80 *2*	843.76	$1/2^+$	0.0	$5/2^+$
1014.52 *10*	28.20 *2*	1014.56	$3/2^+$	0.0	$5/2^+$

† From 1969Bi06.
‡ From 1999Ha16. Uncertainties for 834γ and 1014γ intensities have been deduced by the evaluator based on Iγ(844γ)/Iγ(1014γ)=0.39276(43) (1999Ha16). Uncertainties of 0.08 is reported in 1999Ha16 for these γ-ray intensities.
# Absolute intensity per 100 decays.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays