^{27}Al(μ^-,ν3nγ) 2007Me18

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia, Anagha Chakraborty	NDS 186, 2 (2022)	31-Mar-2022

Adapted from XUNDL dataset compiled by S. Geraedts and B. Singh (McMaster): Oct 10, 2007.
The μ^- beam obtained from decay of π^- beam at 90 MeV/c. Measured γ-ray yields using two HPGe detectors at TRIUMF facility.

Muonic Lyman (or K) series for Aluminum

μ x-ray	Energy	%Intensity (per capture)
2p-1s	346.828 a)	79.8 *8*
3p-1s	412.87 *5*	7.62 *15*
4p-1s	435.96 *10*	4.87 *10*
5p-1s	446.61 *10*	3.86 *10*
6p-1s	452.38 *10*	2.20 *10*
(7 to ∞)p-1s		1.63 *15*

a) 346.828 x-ray energy was used for calibration

^{24}Mg Levels

E(level)[†]	J$^\pi$[†]
0.0	0^+
1368.667	2^+
4122.853	4^+
4238.35	2^+
5235.16	3^+

[†] From Adopted Levels.

γ(^{24}Mg)

E$_\gamma$[†]	I$_\gamma$[‡]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
1368.625	1.3[#] *2*	1368.667	2^+	0.0	0^+
2754.016	0.2[#] *2*	4122.853	4^+	1368.667	2^+
2869.50	<0.4	4238.35	2^+	1368.667	2^+
3866.15	<0.25	5235.16	3^+	1368.667	2^+
4237.96	<0.1	4238.35	2^+	0.0	0^+

[†] From Adopted Gammas.
[‡] Percent yield per muon capture.
[#] 0.2% contribution from ^{24}Na decay was subtracted.

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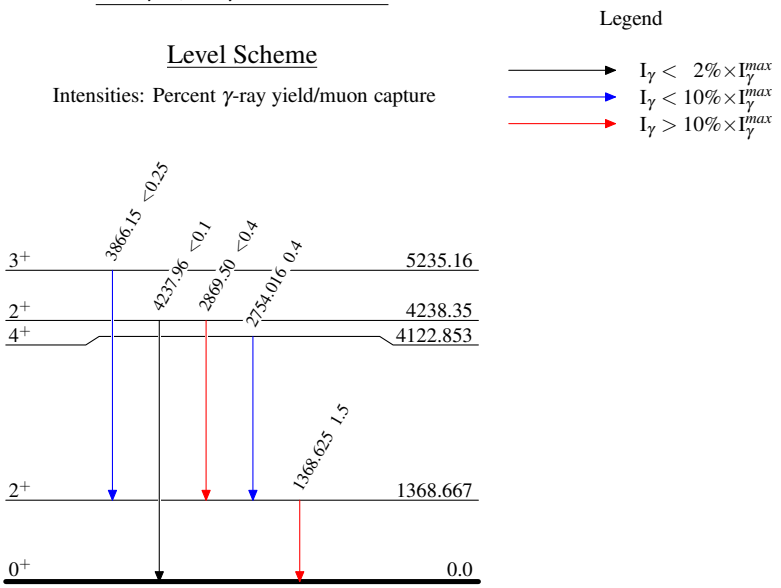
Level Scheme

Intensities: Percent γ-ray yield/muon capture



$^{24}_{12}Mg_{12}$