$^{12}C(^{40}Ca,^{8}Be)$ 2003Sc19

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 190,1 (2023)	20-Jun-2023

2003Sc19: target=natural carbon. Beam=95 MeV from Cologne tandem accelerator. Target: 0.45 mg/cm^2 thick carbon on 3.82 mg/cm^2 gadolinium layer evaporated on 1.0 mg/cm^2 tantalum foil backed by 3.48 mg/cm^2 copper layer. Measured Eγ, Iγ, (scattered ions of carbon and 2α from ^{8}Be decay)γ-coin, (2α)$\gamma(\theta)$, and level lifetimes by DSAM using four NaI(Tl) scintillators and a Ge detector. Deduced g factor of the first 2$^+$ state, and B(E2) values for the first 2$^+$ and 4$^+$ states, and the second 2$^+$ state.

^{44}Ti Levels

B(E2) values from 2003Sc19 deduced by authors from level $T_{1/2}$.

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$[#]	Comments
0.0	0$^+$		
1083.1	2$^+$	2.75 ps *20*	g=+0.52 *15* B(E2)↑=0.069 *5* (2003Sc19) g factor from transient magnetic field method (2003Sc19). $T_{1/2}$: measured mean lifetime τ=3.97 ps *28*.
2454.3	4$^+$	0.451 ps *42*	B(E2)↑=0.047 *4* (2003Sc19) $T_{1/2}$: measured mean lifetime τ=0.65 ps *6*.
2531.0	2$^+$	1.14 ps *21*	B(E2)↑=0.0006 *1* (2003Sc19) B(E2)(from 1083, 2$^+$)=0.0057 10 (2003Sc19). $T_{1/2}$: measured mean lifetime τ=1.65 ps *30*.
3176.2	3$^-$		

[†] From Eγ values.
[‡] From the Adopted Levels.
[#] From DSAM (2003Sc19).

$\gamma(^{44}Ti)$

E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
1083.1	1083.1	2$^+$	0.0	0$^+$
1371.2	2454.3	4$^+$	1083.1	2$^+$
1447.8	2531.0	2$^+$	1083.1	2$^+$
2093.0	3176.2	3$^-$	1083.1	2$^+$

[†] Rounded values from the Adopted dataset.

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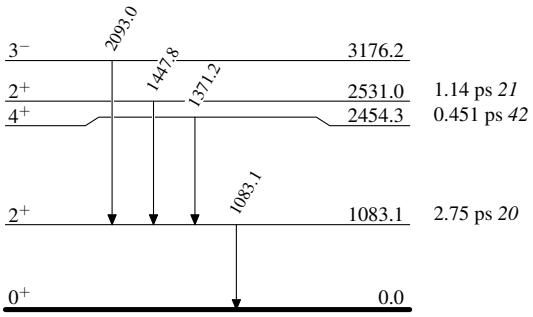
Level Scheme



$^{44}_{22}Ti_{22}$