^{52}Fe ε decay (8.275 h) 1990Me15

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yang Dong, Huo Junde	NDS 128, 185 (2015)	10-Jul-2015

Parent: ^{52}Fe: E=0.0; $J^\pi=0^+$; $T_{1/2}$=8.275 h *8*; Q(ε)=2375 *6*; %ε+%β^+ decay=100.0

Source from mass separation and/or chemical purification, measured Eγ, Iγ with the automated multi-spectrometer γ-ray counting facility. Sources were counted individually and in combination on several different calibrated spectrometer systems utilized various detectors ranging from small (X-ray) detectors to large volume high-purity Ge detectors.

See also ^{52}Mn IT decay (21.1 min).

See also ^{52}Mn ε decay (21.1 min).

See also 1977Ya08.

^{52}Mn Levels

E(level)	J^π[†]	$T_{1/2}$	Comments
0.0	6^+	5.591 d *3*	$T_{1/2}$: From Adopted Levels.
377.749 *5*	2^+	21.1 min *2*	%ε+%β^+=98.25 *2*; %IT=1.75 *2* $T_{1/2}$: From Adopted Levels.
546.438 *6*	1^+		
1417.688 *18*			

[†] From Adopted Levels.

ε,β^+ radiations

E(decay)	E(level)	Iβ^+ [†]	Iε[†]	Log *ft*	I($\varepsilon+\beta^+$)[†]	Comments
(957 *6*)	1417.688		0.095	5.8	0.095	εK=0.8893; εL=0.09422; εM+=0.01644
1825 *12*	546.438	55.49	43.61	4.7	99.1	av Eβ=340 *6*; εK=0.392 *11*; εL=0.0413 *12*; εM+=0.00719 *21*

[†] Absolute intensity per 100 decays.

γ(^{52}Mn)

Iγ normalization: from I($\varepsilon+\beta^+$)=I(γ+ce)(169γ)+I(1040γ)=100. Based on log *ft*>11.0 for a second-forbidden transition, I($\varepsilon+\beta^+$) feeding to the g.s. is <0.00005%.

Eγ	Iγ[†‡]	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.	α[#]	Comments
168.688 *2*	1032 *20*	546.438	1^+	377.749	2^+	[M1]	0.00783	α(K)=0.00705 *10*; α(L)=0.000679 *10*; α(M)=9.22×10^{-5} *13*; α(N+..)=4.37×10^{-6} *7* α(N)=4.37×10^{-6} *7*
377.748 *5*	17.1 *2*	377.749	2^+	0.0	6^+	E4	0.0399	α(K)=0.0356 *5*; α(L)=0.00382 *6*; α(M)=0.000515 *8*; α(N+..)=2.13×10^{-5} *3*
[x]704.6 *2*	0.3 *1*							
1039.928 *17*	0.99 *4*	1417.688		377.749	2^+			
[x]1530.709 *19*	0.47 *2*							
[x]1727.57 *8*	2.2 *1*							

[†] I(1434γ)=1000 in ^{52}Cr.

[‡] For absolute intensity per 100 decays, multiply by 0.0961 *19*.

Continued on next page (footnotes at end of table)

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$\gamma(^{52}Mn)$ (continued)

[#] 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.

[x] γ ray not placed in level scheme.

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Decay Scheme

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