

$^{52}\text{Co}$   $\varepsilon$  decay [1997Ha04](#)

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

Parent:  $^{52}\text{Co}$ :  $E=0$ ;  $J^\pi=(6^+)$ ;  $T_{1/2}=104$  ms 7;  $Q(\varepsilon)=14340$  SY;  $\% \varepsilon + \% \beta^+$  decay=100.0

$^{52}\text{Co}$ - $Q(\varepsilon)$ : 14340 200 (syst, [2012Wa38](#)).

Source produced by  $^{40}\text{Ca}(^{14}\text{N}, 2n)$   $E=62$  MeV. HPGe detectors and scin; measured  $E_\gamma$ ,  $I_\gamma$ . The proposed decay scheme was intensity unbalance at each level. The authors explained that the source may contain an expected but yet unobserved  $2^+$  isomer of  $^{52}\text{Co}$  and the intensity of the 1942 $\gamma$ , which appears as a doublet with the 1944  $\gamma$ -ray from  $^{50\text{m}}\text{Mn}$ .

See also [1990MiZK](#), [1995HaZS](#).

According to the intensity and placement of  $\gamma$ -ray, and intensity balance of a level, I(EC+B+)'s feeding to 2385 and 5655 level are obtained by evaluators.

 $^{52}\text{Fe}$  Levels

E(level)	$J^\pi$ <sup>†</sup>	$T_{1/2}$ <sup>†</sup>
0	$0^+$	8.275 h 8
849.44 10	$2^+$	
2384.73 18	$4^+$	
4326.4 4	$6^+$	
5655.4 5	$6^+$	

<sup>†</sup> From Adopted Levels.

 $\varepsilon, \beta^+$  radiations

E(decay)	E(level)	Log $ft$	$I(\varepsilon + \beta^+)$ <sup>†</sup>
(8684 SY)	5655.4	$\approx 3.4$	63
(11955 SY)	2384.73	$\approx 3.4$	23

<sup>†</sup> Absolute intensity per 100 decays.

 $\gamma(^{52}\text{Fe})$ 

$I_\gamma$  normalization: from assuming mult=[E2] for 849 $\gamma$ ,  $\alpha=0.00012$  22.

$E_\gamma$	$I_\gamma$ <sup>†</sup>	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Comments
849.43 10	100	849.44	$2^+$	0	$0^+$	$I_\gamma$ : possibly overestimated; source may contain an expected but yet unobserved $2^+$ isomer of $^{52}\text{Co}$ ( <a href="#">1997Ha04</a> ).
1328.95 25	63 7	5655.4	$6^+$	4326.4	$6^+$	
1535.27 15	69 6	2384.73	$4^+$	849.44	$2^+$	
1941.7 4	46 10	4326.4	$6^+$	2384.73	$4^+$	$I_\gamma$ : corrected for contribution from $^{50\text{m}}\text{Mn}$ decay $\gamma$ .

<sup>†</sup> For absolute intensity per 100 decays, multiply by 0.9998.

${}^{52}\text{Co}$   $\epsilon$  decay 1997Ha04Decay SchemeIntensities:  $I_{(\gamma+ce)}$  per 100 parent decays

Legend

- $I_{\gamma} < 2\% \times I_{\gamma}^{max}$   
→  $I_{\gamma} < 10\% \times I_{\gamma}^{max}$   
→  $I_{\gamma} > 10\% \times I_{\gamma}^{max}$

