^{62}Fe β^- decay (68 s) 1975Fr16

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Huang Xiaolong, and Wang Xianghan	NDS 204,1 (2025)	30-Jun-2023

Parent: ^{62}Fe: E=0.0; J$^\pi$=0$^+$; $T_{1/2}$=68 s *2*; Q(β^-)=2546 *19*; %β^- decay=100
^{62}Fe-$T_{1/2}$: From ^{62}Fe Adopted Levels.
^{62}Fe-Q(β^-): From 2021Wa16.
1975Fr16: ^{62}Fe source from ^{64}Ni(n,2pn) E=25-200 MeV. Chemical separation. Measured Eγ, Iγ, $\beta\gamma$ coin.
Total decay energy of 2553 keV *17* deduced (by RADLIST code) from proposed decay scheme is in agreement with the expected value of 2546 keV *19*.

^{62}Co Levels

E(level)	J$^\pi$ †	$T_{1/2}$ †
0.0	(2)$^+$	1.54 min *10*
506.1 *1*	1$^+$	

† From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^- †	Log *ft*	Comments
(2040 *19*)	506.1	≈100	≈4.1	av Eβ=831 *9* E(decay): measured E(β end-point)=2.5 MeV *2* from (506γ)β coin (1975Fr16) leads to Q(β^-)=3.0 MeV *2*, in disagreement with 2546 *19* in 2021Wa16. Iβ^-: from Iγ(506).

† Absolute intensity per 100 decays.

γ(^{62}Co)

Iγ normalization: Iγ(506γ)/Iγ of 1173γ (from ^{62}Co decay) ≈ 1 (1975Fr16), thus 506γ carries almost all the γ intensity from ^{62}Fe decay.

E$_\gamma$	I$_\gamma$ †	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	Comments
506.1 *1*	≈100	506.1	1$^+$	0.0	(2)$^+$	I$_\gamma$: Iγ(506γ)/Iγ of 1173γ (from ^{62}Co decay) ≈ 1 (1975Fr16).

† Absolute intensity per 100 decays.

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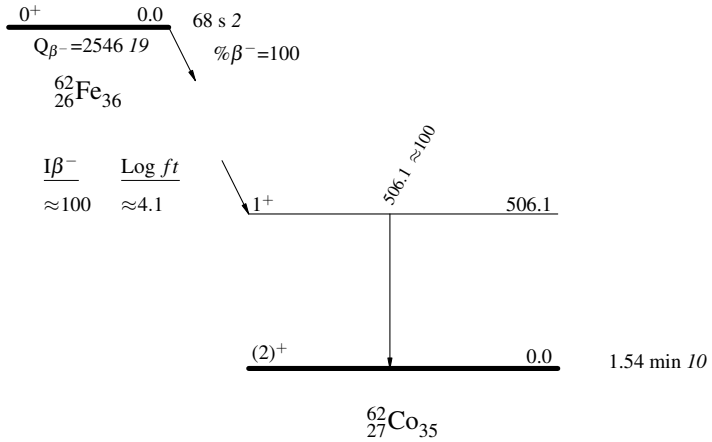
Decay Scheme

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