⁸⁷Mo β⁺ decay 1991Mi15,1977Ko05,1982De43

History							
Type	Author	Citation	Literature Cutoff Date				
Full Evaluation	T. D. Johnson and W. D. Kulp(a)	NDS 129, 1 (2015)	27-Jul-2015				

Parent: ^{87}Mo : E=0.0; J**=7/2+; T_{1/2}=14.02 s 26; Q(\$\beta^+\$)=6988 7; %\$\beta^+\$ decay=100.0

1997Hu07: 58 Ni(32 S,2pn), E(32 S)=170 MeV; measured half-life and proton- γ coincidences.

1991Mi15: 58 Ni(32 S,2pn), E(32 S)=105 MeV; measured γ singles, $\gamma\gamma$ and $\beta\gamma$ coincidences, half-lives of the γ 's, and conversion electrons.

electrons. 1983Ha06: 58 Ni(32 S,2pn), E(32 S)=122 MeV; measured delayed protons and proton- γ coincidences and 87 Mo half-life.

1982De43: ⁵⁸Ni(32 S,2pn), $\beta\gamma$ coincidences with 263 γ with $T_{1/2}$ =15 s 2, measured E_{β} .

1977Ko05: 58 Ni(32 S,2pn), E(32 S)=111 MeV, observed 263-keV γ with $T_{1/2}$ =14.1 s 2 and 397 γ with $T_{1/2}$ =12.4 s 5.

Decay scheme is from 1991Mi15.

Since this decay has a Q value of over 6 MeV and the only observed levels are below 0.5 MeV, the scheme is clearly incomplete. Therefore, the ε intensities are upper limits and logft values are lower limits.

Some of the levels in the 87 Nb daughter decay by the emission of protons to levels in 86 Zr. From proton-752 γ (the $^{2+}$ to ground state γ) coincidences, 1983Ha06 deduce 15% 8 of the decays produce this γ ray. From proton-752 γ coincidences, 1997Hu07 deduce the feeding of the $^{2+}$, $^{4+}$, and $^{6+}$ levels in 86 Zr to be 11% 6, 2% 1, and 2% 1, respectively.

Decay scheme is from 1991Mi15, using level energies from the Adopted Levels.

⁸⁷Nb Levels

E(level)	J ^π †			
0.	(1/2)-			
4.0 5	$(9/2)^+$			
267.0 5	$(7/2)^+$			
334.0 <i>4</i>	$(5/2^{-})$			
400.8 5	$(9/2,7/2,5/2)^+$			

[†] From ⁸⁷Nb Adopted Levels.

ε, β^+ radiations

Since this decay has a Q value of over 6 MeV and the only observed levels are below 0.5 MeV, the scheme is clearly incomplete. Therefore, the ε intensities are upper limits and $\log ft$ values are lower limits.

E(decay)	E(level)	$I\beta^{+\dagger}$	$I\varepsilon^{\dagger}$	Log ft	$I(\varepsilon + \beta^+)^{\dagger}$	Comments	
(6587 7)	400.8	24	0.34	5.4	24	av E β =2586.1 34; ε K=0.01247 5; ε L=0.001489 6; ε M+=0.0003382 1	
(66547)	334.0	3	0.04	6.3	3	av E β =2618.6 34; ε K=0.01205 5; ε L=0.001438 6; ε M+=0.0003267 1	
(67217)	267.0	51	0.69	5.1	52	av E β =2651.1 34; ε K=0.01164 5; ε L=0.001390 5; ε M+=0.0003156 1	
						E(decay): The end-point of the positron spectrum in coincidence with	
						the 263-keV γ ray was measured to be 5.3 3 MeV (1991Mi15).	
(6984 7)	4.0	20	0.23	5.6	20	av E β =2779.0 34; ε K=0.01021 4; ε L=0.001219 5; ε M+=0.0002767 1	

[†] Absolute intensity per 100 decays.

87 Mo β^+ decay 1991Mi15,1977Ko05,1982De43 (continued)

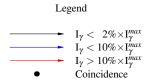
γ (87Nb)

Iy normalization: the absolute intensities, and thereby the ε branch intensities, were determined from the intensity of the 511-keV annihilation radiation (1991Mi15).

E_{γ}^{\dagger}	I_{γ} †#	$E_i(level)$	\mathbf{J}_i^{π}	E_f	\mathtt{J}_f^{π}	Mult.	α^{\ddagger}	Comments
67.0 <i>3</i> 133.9 <i>I</i> 263.0 <i>I</i>	0.7 6 6 3 100 I	334.0 400.8 267.0	(5/2 ⁻) (9/2,7/2,5/2) ⁺ (7/2) ⁺	267.0 267.0 4.0	· / /	M1	0.01705	$\alpha(K)$ exp=0.016 3 $\alpha(K)$ =0.01498 21; $\alpha(L)$ =0.001715 24; $\alpha(M)$ =0.000302 5 $\alpha(N)$ =4.42×10 ⁻⁵ 7; $\alpha(O)$ =2.55×10 ⁻⁶ 4
334.0 <i>4</i>	4 3	334.0	$(5/2^{-})$	0.	$(1/2)^{-}$			
396.8 <i>1</i>	37 5	400.8	$(9/2,7/2,5/2)^+$	4.0	$(9/2)^+$			

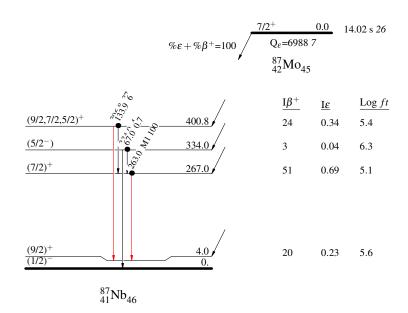
[†] From 1991Mi15. Other: 1982De43.

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Decay Scheme

Intensities: Relative I_γ



[‡] Additional information 1.

For absolute intensity per 100 decays, multiply by 0.55.