

$^9\text{Be}(^{48}\text{Mn}, ^{47}\text{Mn}\gamma)$ 2022Ut02, 2024Ut02

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. Ota and E. A. Mccutchan		NDS 203,1 (2025)	1-Apr-2025

2022Ut02, 2024Ut02: Secondary beam was produced through fragmentation of a primary ^{58}Ni beam with $E=160$ MeV/nucleon on a ^9Be target. Fragmentation products separated with the A1900 separator. Measured $E\gamma$, $I\gamma$, $\gamma\gamma$, recoil- γ using the GREINA array coupled with the S800 spectrograph.

 ^{47}Mn Levels

E(level) [†]	J^π [‡]	$T_{1/2}$	Comments
0.	(5/2 ⁻)		
122.40 20	(7/2 ⁻)	476 ps 25	$T_{1/2}$: from $\tau=687$ ps 17 (stat) 32 (syst) (2024Ut02); uncertainty combined in quadrature by evaluators.
1175.3 8	(9/2 ⁻)		
1380.4 8	11/2 ⁻		
2197.4 21			
2394.5 10	(9/2 ⁻)		
2574.4 22	(13/2 ⁻)		
2723.4 13			
2724.4 13	(15/2 ⁻)		
2833.4 10	(11/2 ⁻)		
3568.4 16	(17/2 ⁻)		

[†] From a least-squares fit to $E\gamma$.

[‡] As proposed by 2022Ut02, based on mirror symmetry comparison to ^{47}Ti .

 $\gamma(^{47}\text{Mn})$

$E_i(\text{level})$	J^π_i	E_γ [†]	I_γ [†]	E_f	J^π_f	Mult.	Comments
122.40	(7/2 ⁻)	122.4 2		0.	(5/2 ⁻)	M1	M1/E2 mixing ratio is unknown, by varying possible E2 component by a factor of 100, 2024Ut02 determine transition is dominant M1, and report $B(M1)=0.043 \mu_n^2$ 3 (2024Ut02) with uncertainty covering the range of physical E2 strengths.
1175.3	(9/2 ⁻)	1053 1	100 5	122.40 (7/2 ⁻)			
		1175 [‡] 5	5 4	0. (5/2 ⁻)			
1380.4	11/2 ⁻	205 1	10 2	1175.3 (9/2 ⁻)			
		1258 1	93 5	122.40 (7/2 ⁻)			
2197.4		1022 2	16 9	1175.3 (9/2 ⁻)			
2394.5	(9/2 ⁻)	1220 [‡] 3	4 3	1175.3 (9/2 ⁻)			
		2272 1	49 5	122.40 (7/2 ⁻)			
2574.4	(13/2 ⁻)	1194 2	7 4	1380.4 11/2 ⁻			
2723.4		1548 1	15 3	1175.3 (9/2 ⁻)			
2724.4	(15/2 ⁻)	1344 1	24 4	1380.4 11/2 ⁻			
2833.4	(11/2 ⁻)	1453 1	3 1	1380.4 11/2 ⁻			
		1658 1	45 4	1175.3 (9/2 ⁻)			
3568.4	(17/2 ⁻)	844 [‡] 1	1 1	2724.4 (15/2 ⁻)			

[†] From 2022Ut02.

[‡] Placement of transition in the level scheme is uncertain.

⁹Be(⁴⁸Mn,⁴⁷Mn γ) 2022Ut02,2024Ut02

Legend

Level Scheme

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)

