^{9}Be(^{63}Mn,^{63}Mn′γ) 2016Ba04

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 196,17 (2024)	30-Sep-2023

Adapted from the XUNDL dataset for 2016Ba04 compiled by F.G. Kondev (ANL), February 4, 2016.

2016Ba04: E=84 MeV/nucleon secondary ^{63}Mn beam was obtained from fragmentation of a ^{76}Ge primary beam at E=130 MeV/nucleon on a 493 mg/cm^2-thick ^{9}Be target at NSCL. Fragments were separated using A1900 separator. The secondary target was 370 mg/cm^2-thick ^{9}Be located at the pivot point of the S-800 spectrograph. γ rays were detected with the SeGA array consisting of seventeen 32-fold segmented HPGe detectors. Measured Eγ, Iγ, $\gamma\gamma$-coin, Doppler-shift attenuation. Deduced levels, J, π, $T_{1/2}$. Comparison with shell-model calculations.

^{63}Mn Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$[#]	Comments
0.0	$5/2^{(-)}$		J$^\pi$: from Adopted Levels.
249 *5*	$(7/2^-)$	5.9 ps *4*	$T_{1/2}$: from τ=8.5 ps *5*.
886 *7*	$(9/2^-)$	0.6 ps *4*	$T_{1/2}$: from τ=0.9 ps *6*.
1261 *9*	$(11/2^-)$	<0.7 ps	$T_{1/2}$: from τ<1 ps *5*.

[†] From Eγ data.

[‡] Tentative assignments from systematics and also reinforced by shell-model calculations (2016Ba04), unless otherwise stated.

[#] From DSAM using the line-shape analysis with GEANT4 simulation (2016Ba04).

γ(^{63}Mn)

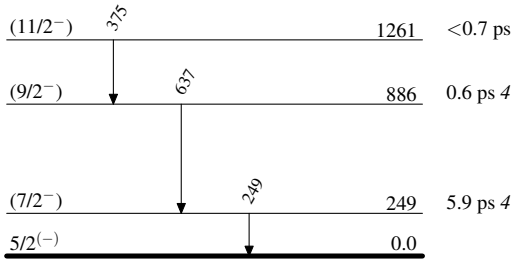
As stated in 2016Ba04, γ-γ coincidences between 249- and 637-keV γ rays were also confirmed in one-neutron knockout from ^{64}Mn in their calibration setting using the GRETINA γ-ray spectrometer. The experimental details are given in 2014Ga07.

E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
249 *5*	249	$(7/2^-)$	0.0	$5/2^{(-)}$
375 *5*	1261	$(11/2^-)$	886	$(9/2^-)$
637 *5*	886	$(9/2^-)$	249	$(7/2^-)$

[†] From 2016Ba04.

^{9}Be(^{63}Mn,^{63}Mn′γ) 2016Ba04

Level Scheme



$^{63}_{25}Mn_{38}$