Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 156, 148 (2019)	31-Jan-2019

S(n)=5590 *SY*; S(p)=2590 *SY*; Q(α)=10100 *9* 2017Wa10
Estimated uncertainties (2017Wa10): ΔS(n)=680, ΔS(p)=790.
S(2n)=12070 *640*, S(2p)=6950 *820* (syst,2017Wa10).
The ^{276}Mt nuclide is produced in about 100 (or 113) correlated decay chains observed at Dubna, GSI and Berkeley, starting from ^{288}Mc and ending in ^{268}Db, which decays by SF. Main references for production of ^{288}Mc: 2004Og03, 2005Og02, 2005Dm03, 2012Og02, 2013Ru11, 2015Ru11, 2013Og01, 2015Ga24, 2016Fo10. See ^{288}Mc Adopted Levels for details.
2012Og02 and 2013Og01 proposed an isomer in ^{276}Mt with a half-life of about 6 s, but it has not been confirmed in the work of 2013Ru11 (Also 2016Fo10). 2013Ru11 suggest that the isomer could be equally associated with ^{280}Rg or ^{272}Bh.
For theoretical studies, consult Nuclear Science References (NSR) database at NNDC, BNL for 56 primary references dealing with the half-lives and other aspects of nuclear structure in this mass region.
Data for excited states and gamma rays are from ^{280}Rg α decay based on studies by 2013Ru11 (at GSI) and 2015Ga24 (at Berkeley).

^{276}Mt Levels

Cross Reference (XREF) Flags

A ^{280}Rg α decay (4.4 s)

E(level)†	$T_{1/2}$	XREF	Comments
0.0	0.69 s *+9−7*	A	%α≈100 Only the α decay mode has been observed. E(level): The observed activity is assumed to correspond to the ground state of ^{276}Mt, as seems suggested in level-scheme Fig. 3 of 2013Ru11. J^{π}: 3^+,8^+ from Ω(proton)=$11/2^+$; Ω(neutron)=$5/2^+$ (1997Mo25, theory). $T_{1/2}$: from 2016Fo10, based on detailed statistical analysis of 96 observed correlated events, starting from ^{288}Mc, in three laboratories (FLNR-JINR-DUBNA, GSI and Berkeley). Others: 0.52 s *10* (2017Og01 review; 0.45 s *+12−9* 2015Og05, review). Measurements: 0.72 s *+87−25* (2004Og03,2005Og02,2011Og07, from three correlated events); 0.70 s *+13−9* (2013Ru11,2015Ru11 from all the known decay chains); 0.54 s *+14−9* (2013Og01, update of 0.68 s *+20−12* in 2012Og02). Eα=8.52 to 10.01 MeV (2017Og01); 9.17-10.01 MeV (2015Og05); 9.17 to 9.95 MeV (2013Ru11); 9.53 MeV and 9.60 MeV (2015Ru11), 9.71 MeV *6* (2004Og03,2011Og07), from ^{276}Mt α decay.
0+x?	4 s *+5−1*		%α≈100 Assignment of this isomer to ^{276}Mt in 2012Og02 and 2013Og01 is based on a wide structure of the α-decay curves, showing two peaks: 9.26 MeV *64* and 9.81 MeV *8*, the partial half-lives of the higher energy peak about 10 times higher than that for the rest of the decays. However, according to 2013Ru11, this isomer could be assigned to ^{280}Rg or ^{272}Bh. $T_{1/2}$: from 2017Og01 review. Others: 6 s *+5−3* (2015Og05 review); 6 s *+8−2* (2012Og02,2013Og01).
194 *1*		A	
237.4 *5*		A	
279.6? *22*		A	
731.6? *14*		A	

† From Eγ data.

Adopted Levels, Gammas (continued)

$\gamma(^{276}Mt)$

E_i(level)	E_γ	I_γ	E_f	Mult.	α[†]
194	194 *1*	100	0.0	(E1)	0.1391
237.4	237.4 *5*	100	0.0	(E1)	0.0926
279.6?	279.6[‡] *22*	100	0.0	[E1]	0.0670
731.6?	494.2[‡] *13*	100	237.4	[E2]	0.1448

[†] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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

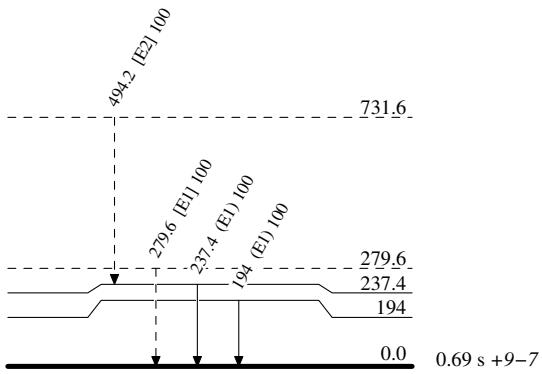
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{276}_{109}Mt_{167}$