

Adopted Levels

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

$Q(\beta^-) = -1810$ SY; $S(n) = 5960$ SY; $S(p) = 2530$ SY; $Q(\alpha) = 10146$ 7 [2017Wa10](#)

Estimated uncertainties ([2017Wa10](#)): $\Delta Q(\beta^-) = 790$, $\Delta S(n) = 680$, $\Delta S(p) = 800$.

$S(2n) = 12770$ 640, $S(2p) = 6430$ 820 (syst, [2017Wa10](#)).

The ^{280}Rg 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 4 s, which could decay by α to ^{272}Bh , 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.

 ^{280}Rg LevelsCross Reference (XREF) Flags

A ^{284}Nh α decay (0.97 s)

E(level)	$T_{1/2}$	XREF	Comments
0	4.4 s +5-4	A	<p>$\% \alpha \approx 100$</p> <p>Only the α decay mode has been observed.</p> <p>E(level): The observed activity is assumed to correspond to the ground state of ^{280}Rg, as seems suggested in level-scheme Fig. 3 of 2013Ru11.</p> <p>J^π: $1^-, 14^-$ from $\Omega(\text{proton}) = 13/2^+$, $\Omega(\text{neutron}) = 15/2^-$ (1997Mo25, theory).</p> <p>$T_{1/2}$: 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: 4.2 s +6-4 (2017Og01 review); 4.3 s +5-4 (2016Fo10, from analysis of 109 decay chains by including the short chains as described by the authors; also 4.27 s +49-50 from analysis of 97 chains and 4.67 s +54-44 from analysis of 98 chains); 4.6 s +8-7 (2015Og05, review).</p> <p>Measurements: 3.6 s +43-13 (2004Og03, 2005Og02, 2011Og07 from three correlated events); 4.8 s +8-6 (2013Ru11, 2015Ru11, from all the known decay chains at the time); 3.61 s +90-60 (2013Og01, update of 3.53 s +99-63 in 2012Og02); 6.8 s +32-16, 3.0 s +15-7 (2016Fo10, from correlated decay times using different combinations of data for 14 short decay chains in their work and from previous Dubna and Berkeley groups).</p> <p>$E\alpha = 9.09$ to 10.07 MeV (2017Og01 review, 9.09-9.92 MeV in 2015Og05 review); 9.76 MeV I (2016Fo10); 9.77 MeV I for one of the events, ranges from (2013Ru11, 2015Ru11); 9.75 MeV 6 (2004Og03, 2011Og07), from ^{280}Rg decay to an excited state in ^{276}Mt, according to 2013Ru11.</p>