Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 114, 1041 (2013)	1-Nov-2011

$Q(\beta^-)$=−5402 *SY*; S(n)=6939 *SY*; S(p)=2831 *SY*; $Q(\alpha)$=9055 *4*   2012Wa38
$\Delta(Q(\beta^-))$=438, Δ(S(n))=306, Δ(S(p))=322 (syst,2012Wa38).
$Q(\varepsilon p)$=2317 *115* (syst,2012Wa38).
Additional information 1.
1994Cw02 calculated the following single-particle level sequence: 0, 9/2[734]; 290, 7/2[624]; 400, 5/2[622]; 670, 1/2[620]; 790,
    3/2[622]; 890, 11/2[725]; 920, 7/2[613]. See also 2005Pa73.

Production and identification of ^{255}Rf nuclide:
1975Og01, 1975Og04: ^{207}Pb(^{50}Ti,2n) excit, fission fragments detected.
1985He06, 1986He28, 1989He03: ^{207}Pb(^{50}Ti,2n) E=192 MeV; total of 19 α particles detected by α-α correlation.
1984Og02, 1984Og03: ^{208}Pb(^{50}Ti,2n).
1997He29: ^{208}Pb(^{50}Ti,3n), ^{206}Pb(^{50}Ti,n), E=4.9 to 5.1 MeV per A, measured excit, delayed α-α correlations.
2001He35: ^{207}Pb(^{50}Ti,2n). Measured α, $\alpha\gamma$, $\alpha\alpha$. In the experiment with improved statistics, compared with their earlier
    experiments, the authors did not confirm any indication for existence of a low-lying isomer in ^{255}Rf with $T_{1/2}\approx$0.9 s. Also
    1999He07.
2006He27: ^{255}Rf isotope produced by the ^{207}Pb(^{50}Ti,2n) at E=4.85 MeV/nucleon. Reaction products were separated from the
    primary beam by the SHIP velocity filter at GSI facility and implanted into a position-sensitive 16-strip PIPS detector.
A tentative α-decaying isomer with half-life=0.8 s *+5−2* reported by 1997He29 has not been confirmed in authors′ later (higher
    statistics) works of 2001He25 and 2006He27.

^{255}Rf Levels

Cross Reference (XREF) Flags

A	^{259}Sg α decay
B	^{208}Pb(^{48}Ti,N)

E(level)[†]	J^π	$T_{1/2}$	XREF	Comments
0.0	$(9/2^-)$	1.68 s *9*	AB	%α=42 *9*; %SF=58 *9*; %ε+%β^+<1
				J^π: analogy with N=151 nuclei (^{245}Pu,^{247}Cm,^{249}Cf, ^{251}Fm);
				configuration=(ν9/2[734]).
				$T_{1/2}$: From 2006He27. Others: 1.65 s *+3−2* (2008Dr05), 1.64 s *11* (2001He35), 1.4 s
				+5−3 (1997He29), 1.4 s *+3−2* (1986He28), 1.4 s *2* (1985He06), 1.5 s *+3−2* (1984De07),
				1.7 s *2* (1984Og02,1984Og03), $\approx$4 s (1975Og01).
				$T_{1/2}$: 2001He35, 1997He29, 1986He28 and 1985He06 are from the same group as
				2006He27, thus the half-life reported in 2006He27 is assumed to supersede values in
				the earlier papers.
				%SF from $T_{1/2}$(SF)=2.9 s *4* (weighted average of 2.7 s *5* (1985He06) and 3.1 s *4*
				(1997He29), recommended in 2000Ho27), and $T_{1/2}$=1.68 s *9* (2006He27).
				%SF. Others: %SF=52 *5* (2001He35); 52 *7* (1985He06,1986He28); 45 *6* (1997He29);
				$\approx$50 (1984Og03,1970Og01). From log $ft\approx$6 and $Q(\varepsilon)\approx$4400 %ε+%$\beta^+\leq$1.
$\approx$63			A	
$\approx$121			A	
$\approx$656			A	E(level): calculated E(1/2[620])=670 keV (1994Cw02).
				J^π: favored α decay from ^{259}Sg suggests same quasiparticle configuration as that for
				^{259}Sg g.s.

[†] From ^{259}Sg α decay.