Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 144, 297 (2017)	25-Aug-2017

Q(β^-)=−1560 *SY*; S(n)=5960 *SY*; S(p)=2750 *SY*; Q(α)=8904 *19* 2017Wa10
Estimated uncertainties (2017Wa10): 110 for Q(β^-) and S(n), 100 for S(p).
S(2n)=13110 *130*, S(2p)=7250 *160* (syst,2017Wa10).
1971Es01: ^{258}Lr produced and identified in ^{248}Cm(^{15}N,4n), and ^{249}Cf(^{12}C,p2n) reactions with measurement of excitation functions.
Theoretical studies: consult the NSR database at www.nndc.bnl.gov for about 25 references dealing with theoretical calculations of half-lives for different decay modes, binding energies, fission characteristics, and other nuclear structure aspects.
Additional information 1.

^{258}Lr Levels

Cross Reference (XREF) Flags

A ^{262}Db α decay (33.8 s)

E(level)	$T_{1/2}$	XREF	Comments
0	3.92 s *33*	A	%α=97.4 *18*; %ε=2.6 *18* (2014Ha04) $T_{1/2}$: weighted average of measured values of 3.54 s *+46−36* (2014Ha04, earlier values: 2.6 s *+120−11* in 2012Mo25, 4.0 s *+22−10* in 2009Mo12); 4.2 s *+15−11* (1992Sc30); 3.92 s *+35−31* (1992Gr02); 4.35 s *59* (1976BeZY), and 4.2 s *6* (1971Es01). Decay modes from 2014Ha04. Others: SF decay of the ε-decay daughter was not detected and an upper limit of 5% was given by 1971Es01. $T_{1/2}$(SF)>20 s, measured by 1971Fl02, gives %SF<20. 1992Gr02 recorded one α-SF correlation, probably due to ^{262}Db α followed by the ε decay of ^{258}Lr to ^{258}No, and 28 α-α correlations in their study of ^{262}Db α decay, and suggested that the ε and SF decay branches of ^{258}Lr account for less than a few percent.
0+x		A	E(level): x=235 *105* from Q(α)=9050 *100* for ^{262}Db (syst,2017Wa10) and Eα=8680 *30* (2014Ha04).
153+x? *35*		A	E(level): this level is treated as questionable as the 8530α is observed by 1977BeZM only, and not identified clearly by 2014Ha04, even though in 1977BeZM the 8530α is claimed as stronger than the 8670α which was observed clearly by 2014Ha04.
224+x *50*		A	From the favored α (the hindrance factor of ≈3.4) transition to this level, the configuration of this level is expected to be the same as that of its parent, the ground state of ^{262}Db g.s.