Adopted Levels, Gammas

	Type	Author	History Citation	Literature Cutoff Date
	Full Evaluation	C. D. Nesaraja	NDS 189,1 (2023)	14-Feb-2023

Q(β^-)=−3880 *syst*; S(n)=7780 *syst*; S(p)=2450 *syst*; Q(α)=7909 *3*   2021Wa16
ΔQ(β^-)=260, ΔS(n)=250, ΔS(p)=170 (syst,2021Wa16).
S(2n)=14570 *270*, S(2p)=6950 *170* (syst,2021Wa16).

^{245}Es Levels

Cross Reference (XREF) Flags

A ^{249}Md α decay

E(level)	J^π	$T_{1/2}$	XREF	Comments
0.0	(3/2$^-$)	66.6 s *60*	A	%α=54 *7*; %ε=46 *7* (2019Br06)
				%α: from counting of α decays of ^{249}Md and its α-decay daughter ^{245}Es (2019Br06) Others: %α=80 +*20−50* (1985He22), %ε=20 +*50−20* (1985He22), %α= 40 *10* (1973Es01).
				$T_{1/2}$: Weighted average of 72 s $^{60-24}$ (2022Te01), 65 s *6* (2019Br06), 55 s +*12−18* (2008Ga25), 80 s +*96−28* (1985He22), 66 s 6 (1989Ha27), and 80 s *9* (1967Mi06).
				J^π: Systematics of Nilsson orbitals suggests either the 3/2[521] or the 7/2[633] state. 3/2[521] and 7/2[633] orbitals are close in energy and either could be the g.s. However, 2005He27 estimate that 7/2$^+$ bandhead of 7/2[633] band lies ≈30 keV above the 3/2$^-$ bandhead of 3/2[521] band, hence the g.s is assigned (3/2$^-$).
0.0+x	(7/2$^+$)		A	Configuration=7/2[633].
				E(level): x ≈30 keV (15 ±*15* keV)(2005He27).
				J^π: From 7/2[633] Nilsson orbital assignment (2005He27) and E1 253.2γ from 7/2$^-$ 253.2+X level.
52.8+x	(9/2$^+$)		A	J^π: From systematics of γ feeding from the (7/2$^-$) level in ^{243}Es (2014Ne14), ^{247}Es (2015Ne04) and ^{249} (2012He09), ^{251}Es (2005He27).
253.2+x *3*	(7/2$^-$)		A	Configuration=7/2[514].
				Favored α decay from J≠(7/2$^-$) ^{249}Md and 7/2[514] Nilsson orbital assignment (2005He27).

$\gamma(^{245}$Es)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	$\alpha^\dagger$	Comments
253.2+x	(7/2$^-$)	200.4 *7*	20 *8*	52.8+x	(9/2$^+$)			
		253.2 *5*	100	0.0+x	(7/2$^+$)	E1	0.0673 *10*	α(K)=0.0518 *8*; α(L)=0.01155 *17*; α(M)=0.00285 *4* α(N)=0.000786 *12*; α(O)=0.0002014 *30*; α(P)=3.62×10^{-5} *5*; α(Q)=1.544×10^{-6} *22* Mult.: From α(K)exp≤0.09; α(L)exp≤0.034 (deduced from ratio of K x ray, L x ray and Iγ) (2005He27).

† Additional information 1.

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<u>Level Scheme</u>

Intensities: Type not specified

Legend

$I_\gamma < \ 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

253.2 E1 100

200.4 20

$(7/2^-)$ 253.2+x

$(9/2^+)$ 52.8+x

$(7/2^+)$ 0.0+x

$(3/2^-)$ 0.0   66.6 s *60*

$^{245}_{99}$Es$_{146}$