

²⁴⁶Cm α decay

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. J. Martin, C. D. Nesaraja	NDS 186, 261 (2022)	31-Dec-2021

Parent: ²⁴⁶Cm: E=0.0; J ^{π} =0⁺; T_{1/2}=4706 y 40; Q(α)=5475.1 9; % α decay=99.97385 7
²⁴⁶Cm-Q(α): From [2021Wa16](#).

²⁴²Pu Levels

E(level)	J ^{π}	T _{1/2}	Comments
0.0	0 ⁺	3.73×10 ⁵ y 2	
44.545 9	2 ⁺	160 ps 3	E(level): From E γ .
146 3	4 ⁺		E(level): From Q α and E α .

α radiations

E α	E(level)	I α^{\ddagger}	HF ^{\dagger}	Comments
5242 3	146	0.020 2	510 53	E α ,I α : From 2007Ko01 .
5342.6 10	44.545	20.9 4	2.04 5	E α : The measured values are 5345.7 50 (1963Be48), 5344.1 50 (1963Dz07), 5342.3 20 (1966Ba07), 5342.6 10 (1984Sh31), and 5342 3 (2007Ko01). Except for the most recent value, the energies are those of the authors as adjusted by 1991Ry01 for newer calibration standards. The uncertainty shown for the value of 1966Ba07 is that assigned by 1991Ry01 . The authors do not give an uncertainty. A weighted average of these values gives 5342.63 83. The evaluators adopt 5342.6 10 with the uncertainty increased to the lowest of the input values. I α : From 2007Ko01 . Others: 22% (1963Be48), 22% 5 (1963Dz07), 21% (1966Ba07), 17.8% 12 (1984Sh31).
5385.7 10	0.0	79.08 22	1.000	E α : The measured values are 5387.7 40 (1963Be48), 5386.1 40 (1963Dz07), 5385.3 20 (1966Ba07), 5385.6 10 (1984Sh31), and 5386 3 (2007Ko01). Except for the most recent value, the energies are those of the authors as adjusted by 1991Ry01 for newer calibration standards. The uncertainty shown for the value of 1966Ba07 is that assigned by 1991Ry01 . The authors do not give an uncertainty. A weighted average of these values gives 5385.69 82. The evaluators adopt 5385.7 10 with the uncertainty increased to the lowest of the input values. I α : From 2007Ko01 . Others: 78% (1963Be48), 78% 5 (1963Dz07), 79% (1966Ba07), 82.2% 12 (1984Sh31).

^{\dagger} The nuclear radius parameter r₀(²⁴²Pu)=1.49412 62 is deduced by assuming HF=1.0 for the ground-state to ground-state alpha decay branch.

^{\ddagger} For absolute intensity per 100 decays, multiply by .9997385 7.

γ (²⁴²Pu)

E γ	I γ^{\dagger}	E _i (level)	J _i ^{π}	E _f	J _f ^{π}	Mult.	α^{\ddagger}	I _(γ+ce) ^{\dagger}	Comments
44.545 9	0.0279 7	44.545	2 ⁺	0.0	0 ⁺	E2	748 11	20.9 4	E γ : From 1972Sc01 . Standards used by the authors are consistent with those given in 2000He14 . I _(γ+ce) : From I α . I γ : From I(γ +ce) and α . Mult.: From Adopted Gammas.

^{\dagger} For absolute intensity per 100 decays, multiply by .9997385 7.

^{\ddagger} Total theoretical internal conversion coefficients, calculated using the BrIcc code ([2008Ki07](#)) with Frozen orbital approximation based on γ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

^{246}Cm α decayDecay SchemeIntensities: $I(\gamma+ce)$ per 100 parent decays