^{144}Sm(^{3}He,nγ) 1980Ju04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, A. Rodionov and G. Shulyak	NDS 136, 163 (2016)	14-Jul-2016

1980Ju04: ^{144}Sm(^{3}He,nγ), E=14-27 MeV; measured ce, Eγ, Iγ, (ce)(^{3}He)(t), $T_{1/2}$. ^{146}Gd; deduced levels, J^{π}, E0 transition.
Magnetic lens spectrometer, Si(Li), Ge(Li) detectors.
1987Ya13: ^{144}Sm(^{3}He,n), E=25.5 MeV; measured E0 transition in ^{146}Gd.
1979Al07: ^{144}Sm(^{3}He,n), E=25.4 MeV; measured $\sigma(E_n,\theta)$. ^{146}Gd; deduced level, L.

^{146}Gd Levels

E(level)†	J^{π}@	$T_{1/2}$	L#	Comments
0.0	0^+	48.27 d *9*	0	$T_{1/2}$: from 'Adopted Levels'.
1579.40 *5*	3^-			L: the data are slightly consistent with J=3^- (fixed assignment), but are well fitted to L=2.
1972.02 *7*	2^+			L: 0+2; measured E=2.09 MeV group which corresponds to unresolved doublet of 1971 keV, J=2^+ and 2165 keV, J=0^+.
2164.72 *12*	0^+	375 ps *40*		$T_{1/2}$: centroid technique for K-electrons from the 2165 keV level and beam burst delay (1980Ju04). L: see comment to 1972 keV level.
2800?‡				
3500?‡				E(level): probable, this group corresponds to 3485 keV, $J^{\pi}=0^+$ level in (α,2nγ).
3640.8 *6*	0^+			E(level): from 1987Ya13.

† From 'Adopted Levels'.
‡ From 1979Al07.
# From 1979Al07.
@ From 'Adopted Levels'.

γ(^{146}Gd)

E_γ†	E_i(level)	J_i^{π}	E_f	J_f^{π}	Mult.†	α‡	$I_{(\gamma+ce)}$	Comments
(193.7)	2164.72	0^+	1972.02	2^+	E2	0.247	<15	ce(K)/(γ+ce)=0.1366 *17*; ce(L)/(γ+ce)=0.0477 *7*; ce(M)/(γ+ce)=0.01101 *16* ce(N)/(γ+ce)=0.00247 *4*; ce(O)/(γ+ce)=0.000339 *5*; ce(P)/(γ+ce)=7.79×10^{-6} *12* α(K)=0.1704 *24*; α(L)=0.0595 *9*; α(M)=0.01373 *20* α(N)=0.00309 *5*; α(O)=0.000423 *6*; α(P)=9.71×10^{-6} *14* E_γ: γ unobserved. $I_{(\gamma+ce)}$: ce(K)(2165)/Iγ(193.7)>4 leads to Ice(2165)/I(γ+ce)(194)>85/15.
1579.3	1579.40	3^-	0.0	0^+	E3	0.00216		α(K)=0.001778 *25*; α(L)=0.000262 *4*; α(M)=5.71×10^{-5} *8* α(N)=1.310×10^{-5} *19*; α(O)=2.01×10^{-6} *3*; α(P)=1.278×10^{-7} *18*; α(IPF)=4.64×10^{-5} *7*
2165.0 *4*	2164.72	0^+	0.0	0^+	E0		>85	E_γ: γ unobserved, ce measured. Mult.: γ rays unobserved, the values of ce(K)(2165)/ce(K)(1579.3)≈3 and α(1579.3, E3) establish E0 mult. for the 2165.0 keV transition.
3638	3640.8	0^+	0.0	0^+	E0			E_γ,Mult.: from 1987Ya13.

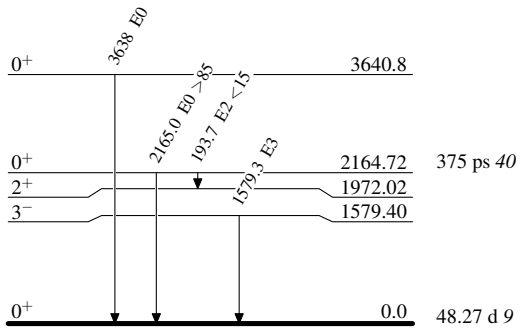
† From 1980Ju04, except as noted.
‡ Additional information 1.

Legend

^{144}Sm(^{3}He,nγ) 1980Ju04

Level Scheme

γ Decay (Uncertain)



$^{146}_{64}Gd_{82}$