$^{152}_{63}$Eu $_{89}$

1 Decay Scheme

Eu-152 disintegrates 72.1% by electron-capture and about 0.027% by emission of positrons to Sm-152 and by beta minus emission (27.9%) to Gd-152.
L'europium 152 se désintègre par capture électronique (72,1%) et par émission de positron (environ 0,027%) vers le samarium 152 et par émission bêta moins (27,9%) vers le gadolinium 152.

2 Nuclear Data

$T_{1/2}$(^{152}Eu)	:	13,522	(16)	a
Q^-(^{152}Eu)	:	1818,8	(11)	keV
Q^+(^{152}Eu)	:	1874,3	(7)	keV

2.1 Electron Capture Transitions

	Energy keV	Probability × 100	Nature	lg ft	P_K	P_L	P_M
$\epsilon_{0,19}$	105,2 (7)	0,068 (5)	1st Forbidden	10,3	0,6586 (33)	0,2591 (24)	0,0657 (12)
$\epsilon_{0,18}$	117,1 (7)	0,041 (3)	1st Forbidden	10,7	0,6903 (28)	0,2358 (20)	0,0591 (11)
$\epsilon_{0,17}$	144,1 (7)	0,0422 (12)	(Allowed)	10,9	0,7339 (23)	0,2036 (16)	0,0499 (9)
$\epsilon_{0,16}$	224,4 (7)	0,889 (14)	Allowed	10,1	0,7859 (19)	0,1651 (13)	0,0392 (7)
$\epsilon_{0,15}$	261,4 (7)	0,0208 (14)		11,9	0,7966 (18)	0,1571 (13)	0,0370 (7)
$\epsilon_{0,14}$	294,9 (7)	2,068 (12)	Allowed	10	0,8036 (17)	0,1519 (12)	0,0356 (7)
$\epsilon_{0,13}$	344,5 (7)	24,72 (11)	Allowed	9,1	0,8109 (17)	0,1465 (12)	0,0341 (7)
$\epsilon_{0,12}$	502,6 (7)	0,869 (24)	1st Forbidden	10,9	0,8236 (16)	0,1370 (11)	0,0316 (6)
$\epsilon_{0,11}$	581,5 (7)	0,644 (10)	(1st Forbidden)	11,2	0,8271 (16)	0,1344 (11)	0,0309 (6)
$\epsilon_{0,10}$	640,4 (7)	17,16 (8)	1st Forbidden	9,8	0,8291 (16)	0,1329 (11)	0,0305 (6)
$\epsilon_{0,9}$	788,5 (7)	21,35 (11)	1st Forbidden	9,9	0,8327 (15)	0,1302 (11)	0,0297 (6)
$\epsilon_{0,8}$	833,2 (7)	0,086 (7)	Allowed	12,4	0,8335 (15)	0,1296 (11)	0,0296 (6)
$\epsilon_{0,7}$	851,3 (7)	0,238 (5)	1st Forbidden	11,9	0,8338 (15)	0,1294 (11)	0,0295 (6)
$\epsilon_{0,5}$	1063,9 (7)	1,28 (3)	1st Forbidden	11,4	0,8366 (15)	0,1273 (11)	0,0290 (6)
$\epsilon_{0,2}$	1507,8 (7)	0,77 (5)	1st Forbidden	12	0,8398 (15)	0,1249 (11)	0,0283 (5)
$\epsilon_{0,1}$	1752,5 (7)	1,7 (10)	1st Forbidden	11,8	0,8408 (15)	0,1241 (10)	0,0281 (5)

2.2 β^+ Transitions

	Energy keV	Probability × 100	Nature	lg ft
$\beta^+_{0,2}$	485,8 (7)	0,0024 (2)	1st Forbidden	
$\beta^+_{0,1}$	730,5 (7)	0,025 (15)	1st Forbidden	

2.3 β^- Transitions

	Energy keV	Probability × 100	Nature	lg ft
$\beta^-_{0,15}$	126,4 (11)	0,0203 (11)	1st Forbidden	11,1
$\beta^-_{0,14}$	175,4 (11)	1,826 (21)	Allowed	9,6
$\beta^-_{0,13}$	213,5 (11)	0,101 (3)	1st Forbidden	11,1
$\beta^-_{0,12}$	268,6 (11)	0,0536 (18)	1st Forbidden	11,7
$\beta^-_{0,11}$	384,8 (11)	2,44 (3)	1st Forbidden	10,5
$\beta^-_{0,10}$	500,3 (11)	0,0267 (17)	1st Forbidden	12,9
$\beta^-_{0,9}$	504,1 (11)	0,0048 (7)	2nd Forbidden	13,6
$\beta^-_{0,8}$	536,5 (11)	0,037 (8)	1st Forbidden	12,8
$\beta^-_{0,7}$	695,6 (11)	13,80 (15)	Allowed	10,6
$\beta^-_{0,6}$	709,7 (11)	0,245 (8)	1st Forbidden	12,4
$\beta^-_{0,4}$	888,2 (11)	0,303 (7)	1st Forbidden	12,7
$\beta^-_{0,3}$	1063,4 (11)	0,904 (14)	1st Forbidden	12,5
$\beta^-_{0,1}$	1474,5 (11)	8,17 (11)	1st Forbidden	12,1

2.4 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_K	α_L (10^{-3})	α_M (10^{-3})	α_T
$\gamma_{1,0}$(Sm)	121,7818 (3)	61,5 (10)	E2	0,676 (20)	378 (11)	87,5 (26)	1,165 (35)
$\gamma_{5,3}$(Sm)	125,69 (13)	0,038 (13)	(E2)	0,616 (18)	329 (10)	76,0 (23)	1,042 (31)
$\gamma_{10,9}$(Sm)	148,010 (17)	0,055 (8)	(M1+50%E2)	0,430 (13)	115,0 (34)	26,0 (8)	0,578 (17)
$\gamma_{7,4}$(Gd)	192,6 (4)	0,00714 (22)	(E1)	0,0426 (13)	6,09 (18)	1,32 (4)	0,0504 (15)
$\gamma_{14,12}$(Sm)	207,6 (3)	0,0062 (4)	(E1)	0,0327 (10)	4,55 (14)	0,975 (29)	0,0385 (12)
$\gamma_{14,11}$(Gd)	209,41 (13)	0,0058 (5)	(E1)	0,0342 (10)	4,86 (15)	1,050 (32)	0,0404 (12)
$\gamma_{7,5}$(Sm)	212,568 (15)	0,0229 (8)	E2	0,1244 (37)	36,4 (11)	8,25 (25)	0,171 (5)
$\gamma_{(-1,0)}$(Sm)	237,3 (1)	0,0026 (9)	(E1)	0,0231 (7)	3,18 (10)	0,681 (20)	0,0272 (8)
$\gamma_{19,13}$(Sm)	239,42 (17)	0,008 (3)	(E1)	0,0225 (7)	3,11 (9)	0,665 (20)	0,0265 (8)
$\gamma_{2,1}$(Sm)	244,6976 (8)	8,37 (5)	E2	0,0809 (24)	21,1 (6)	4,75 (14)	0,1080 (32)
$\gamma_{11,8}$(Sm)	251,633 (7)	0,0687 (15)	(E1)	0,0198 (6)	2,72 (8)	0,583 (17)	0,0233 (7)
$\gamma_{11,7}$(Sm)	269,86 (6)	0,006 (3)	(E2)	0,0602 (18)	14,60 (44)	3,27 (10)	0,0789 (24)
$\gamma_{2,1}$(Gd)	271,131 (8)	0,084 (3)	E2	0,0621 (19)	16,20 (49)	3,70 (11)	0,0831 (25)
$\gamma_{9,5}$(Sm)	275,449 (15)	0,0357 (19)	(M1)	0,0887 (27)	12,30 (37)	2,65 (8)	0,1044 (31)
$\gamma_{12,9}$(Sm)	285,98 (3)	0,0107 (7)	(E2)	0,0506 (15)	11,80 (35)	2,63 (8)	0,0657 (20)

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_K	α_L (10^{-3})	α_M (10^{-3})	α_T
$\gamma_{13,10}$(Sm)	295,9390 (17)	0,449 (3)	E1	0,01310 (39)	1,78 (5)	0,381 (11)	0,01530 (46)
$\gamma_{4,2}$(Gd)	315,174 (17)	0,052 (2)	(E2)	0,0400 (12)	9,38 (28)	2,12 (6)	0,0521 (16)
$\gamma_{7,4}$(Sm)	316,2 (2)	0,0032 (10)	(E2)	0,0376 (11)	8,19 (25)	1,83 (5)	0,0481 (14)
$\gamma_{(-1,1)}$(Sm)	320,03 (15)	0,0017 (6)					
$\gamma_{11,6}$(Gd)	324,83 (3)	0,0785 (16)	M1+50%E2	0,0521 (16)	8,97 (27)	1,99 (6)	0,0636 (19)
$\gamma_{11,6}$(Sm)	329,425 (21)	0,131 (6)	(E1)	0,0100 (3)	1,360 (41)	0,290 (9)	0,01170 (35)
$\gamma_{12,8}$(Sm)	330,54 (10)	0,0061 (17)	(E1)	0,0099 (3)	1,34 (4)	0,288 (9)	0,01160 (35)
$\gamma_{4,2}$(Sm)	340,40 (14)	0,033 (3)	E2	0,0304 (9)	6,32 (19)	1,410 (42)	0,0385 (12)
$\gamma_{1,0}$(Gd)	344,2789 (12)	27,65 (13)	E2	0,0311 (9)	6,87 (21)	1,550 (46)	0,0399 (12)
$\gamma_{8,4}$(Gd)	351,66 (4)	0,0145 (24)	E2	0,0293 (9)	6,39 (19)	1,440 (43)	0,0375 (11)
$\gamma_{16,11}$(Sm)	357,26 (5)	0,0041 (5)	(E1)	0,00820 (25)	1,110 (33)	0,237 (7)	0,00960 (29)
$\gamma_{7,3}$(Gd)	367,7896 (20)	0,870 (5)	E1	0,00830 (25)	1,130 (34)	0,245 (7)	0,00970 (29)
$\gamma_{(-1,2)}$(Sm)	379,37 (6)	0,00083 (21)					
$\gamma_{18,12}$(Sm)	385,69 (20)	0,0052 (7)	(M1+50%E2)	0,0290 (9)	4,59 (14)	0,999 (30)	0,0348 (10)
$\gamma_{10,4}$(Gd)	387,90 (8)	0,00429 (45)	(M1+E2+E0)	0,38 (9)			0,45 (11)
$\gamma_{(-1,3)}$(Sm)	391,32 (14)	0,00125 (22)					
$\gamma_{(-1,4)}$(Sm)	406,74 (15)	0,00083 (21)					
$\gamma_{3,1}$(Gd)	411,1171 (12)	2,292 (11)	E2	0,0190 (6)	3,79 (11)	0,849 (25)	0,0239 (7)
$\gamma_{16,10}$(Sm)	416,049 (8)	0,1097 (17)	(E1)	0,00570 (17)	0,762 (23)	0,1630 (49)	0,0067 (2)
$\gamma_{10,5}$(Sm)	423,45 (4)	0,0033 (5)	(M1+50%E2)	0,0226 (7)	3,5 (1)	0,761 (23)	0,0271 (8)
$\gamma_{12,6}$(Gd)	440,86 (10)	0,0136 (11)	(E2)	0,01580 (47)	3,03 (9)	0,677 (20)	0,0197 (6)
$\gamma_{5,2}$(Sm)	443,966 (3)	0,325 (18)	(E2)	0,01450 (44)	2,63 (8)	0,579 (17)	0,0178 (5)
$\gamma_{13,9}$(Sm)	443,966 (3)	2,821 (22)	E1(+M2)	0,00520 (16)	0,635 (19)	0,1390 (42)	0,00600 (18)
$\gamma_{13,7}$(Gd)	482,31 (3)	0,0014 (6)	(E1)	0,00440 (13)	0,594 (18)	0,1280 (38)	0,00510 (15)
$\gamma_{11,5}$(Sm)	482,31 (3)	0,0285 (16)	(M1+50%E2)	0,01610 (48)	2,43 (7)	0,526 (16)	0,0192 (6)
$\gamma_{13,8}$(Sm)	488,680 (2)	0,4197 (24)	M1+E2	0,01150 (34)	1,96 (6)	0,429 (13)	0,01400 (42)
$\gamma_{14,9}$(Sm)	493,508 (20)	0,028 (3)	(E1)	0,00380 (11)	0,509 (15)	0,1090 (33)	0,00450 (14)
$\gamma_{6,2}$(Gd)	493,509 (20)	0,0093 (21)	(E2)	0,01180 (35)	2,14 (6)	0,476 (14)	0,01450 (44)
$\gamma_{13,6}$(Gd)	496,39 (3)	0,00461 (44)	M1+E2+E0	0,082 (9)			0,097 (11)
$\gamma_{17,10}$(Sm)	496,39 (3)	0,0049 (8)	(E1)	0,00380 (11)	0,502 (15)	0,1070 (32)	0,00440 (13)
$\gamma_{11,4}$(Gd)	503,475 (5)	0,1554 (18)	(E2)	0,01120 (34)	2,02 (6)	0,448 (13)	0,01380 (41)
$\gamma_{14,7}$(Gd)	520,228 (5)	0,0545 (12)	(M1+50%E2)	0,01520 (46)	2,30 (7)	0,504 (15)	0,0181 (5)
$\gamma_{18,10}$(Sm)	523,13 (5)	0,0114 (21)	(M1+50%E2)	0,01310 (39)	1,94 (6)	0,421 (13)	0,01560 (47)
$\gamma_{8,3}$(Gd)	526,882 (20)	0,0141 (7)	M1+E2+E0	0,084 (9)			0,094 (8)
$\gamma_{14,6}$(Gd)	534,246 (7)	0,0369 (19)	(E1)	0,0035 (1)	0,470 (14)	0,101 (3)	0,00410 (12)
$\gamma_{(-1,5)}$(Sm)	535,4 (4)	0,0060 (16)	(M1+50%E2)	0,01240 (37)	1,83 (5)	0,395 (12)	0,01470 (44)
$\gamma_{14,8}$(Sm)	538,29 (6)	0,0042 (6)	(M1+50%E2)	0,01220 (37)	1,80 (5)	0,389 (12)	0,01450 (44)
$\gamma_{14,7}$(Sm)	556,56 (3)	0,0178 (11)	(E1)	0,00290 (9)	0,387 (12)	0,0826 (25)	0,0034 (1)
$\gamma_{13,5}$(Gd)	557,91 (17)	0,0044 (7)	(E2)	0,00870 (26)	1,490 (45)	0,331 (10)	0,01060 (32)
$\gamma_{12,5}$(Sm)	561,2 (5)	0,00109 (21)	(E2)	0,00790 (24)	1,300 (39)	0,285 (9)	0,00960 (29)
$\gamma_{3,1}$(Sm)	562,93 (2)	0,038 (13)	E2	0,00780 (23)	1,290 (39)	0,282 (8)	0,00950 (28)
$\gamma_{16,9}$(Sm)	563,991 (7)	0,458 (14)	E1	0,00280 (8)	0,376 (11)	0,0802 (24)	0,0033 (1)
$\gamma_{13,6}$(Sm)	566,442 (5)	0,133 (4)	M1+35,4%E2	0,01170 (35)	1,66 (5)	0,357 (11)	0,01380 (41)
$\gamma_{15,8}$(Sm)	571,83 (8)	0,0048 (8)					
$\gamma_{4,1}$(Gd)	586,266 (3)	0,4732 (41)	E2+4%M1+E0	0,0202 (16)			0,0243 (9)
$\gamma_{(-1,6)}$(Sm)	595,61 (1)	0,0031 (17)					
$\gamma_{14,6}$(Sm)	616,05 (3)	0,0092 (6)	(E2)	0,00630 (19)	1,00 (3)	0,219 (7)	0,00760 (23)
$\gamma_{17,9}$(Sm)	644,37 (5)	0,0063 (6)	(E1)	0,00210 (6)	0,280 (8)	0,0598 (18)	0,00250 (8)
$\gamma_{7,2}$(Sm)	656,490 (5)	0,1519 (19)	E2+18%M1+E0	0,0497 (16)			0,0568 (20)
$\gamma_{12,4}$(Sm)	664,78 (5)	0,010 (3)	(E2)	0,00520 (16)	0,818 (25)	0,178 (5)	0,00630 (19)
$\gamma_{18,9}$(Sm)	671,157 (17)	0,0196 (13)	M1+1,9%E2	0,00900 (27)	1,220 (37)	0,260 (8)	0,01050 (32)
$\gamma_{13,4}$(Gd)	674,677 (7)	0,0172 (18)	E2+17%M1	0,00630 (19)	0,980 (29)	0,215 (6)	0,00760 (23)
$\gamma_{8,2}$(Sm)	674,677 (3)	0,170 (4)	E1	0,00190 (6)	0,254 (8)	0,0542 (16)	0,00230 (7)
$\gamma_{11,3}$(Gd)	678,625 (5)	0,473 (4)	E2+6%M1	0,00570 (17)	0,900 (27)	0,198 (6)	0,00690 (21)
$\gamma_{(-1,7)}$(Sm)	683,32 (11)	0,0031 (8)					
$\gamma_{16,6}$(Sm)	686,61 (5)	0,0201 (17)	(M1+50%E2)	0,0067 (2)	0,954 (29)	0,205 (6)	0,00790 (24)
$\gamma_{5,1}$(Sm)	688,672 (5)	0,877 (6)	E2+M1+E0	0,0359 (13)			0,0434 (13)
$\gamma_{(-1,8)}$(Sm)	696,87 (19)	0,0029 (10)					
$\gamma_{5,1}$(Gd)	703,25 (6)	0,0018 (9)	(E2)	0,00500 (15)	0,796 (24)	0,175 (5)	0,00600 (18)

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_K	α_L (10^{-3})	α_M (10^{-3})	α_T
$\gamma_{10,2}$(Gd)	703,25 (6)	0,0035 (9)	(E2)	0,00500 (15)	0,796 (24)	0,175 (5)	0,00600 (18)
$\gamma_{14,4}$(Gd)	712,845 (6)	0,0963 (19)	(E1)	0,00190 (6)	0,251 (8)	0,0541 (16)	0,00220 (7)
$\gamma_{13,5}$(Sm)	719,351 (4)	0,059 (7)	(E1)	0,00170 (5)	0,222 (7)	0,0473 (14)	0,00200 (6)
$\gamma_{9,2}$(Sm)	719,351 (4)	0,270 (13)	(E2)	0,00440 (13)	0,666 (20)	0,1440 (43)	0,00520 (16)
$\gamma_{19,8}$(Sm)	727,99 (14)	0,0106 (13)	(E1)	0,00166 (5)	0,216 (6)	0,0461 (14)	0,00193 (6)
$\gamma_{(-1,9)}$(Sm)	735,4 (1)	0,0058 (10)					
$\gamma_{(-1,10)}$(Sm)	756,12 (9)	0,0054 (8)					
$\gamma_{6,1}$(Gd)	764,902 (9)	0,191 (4)	E2+6,5%M1	0,00440 (13)	0,669 (20)	0,1460 (44)	0,00520 (16)
$\gamma_{14,5}$(Sm)	768,946 (9)	0,089 (3)	(E1)	0,001500 (45)	0,193 (6)	0,0412 (12)	0,00170 (5)
$\gamma_{7,1}$(Gd)	778,9066 (24)	12,99 (6)	E1	0,001600 (48)	0,209 (6)	0,0450 (14)	0,00190 (6)
$\gamma_{12,3}$(Gd)	794,81 (3)	0,0265 (11)	M1(+13,8%E2)	0,0065 (2)	0,905 (27)	0,196 (6)	0,00770 (23)
$\gamma_{19,6}$(Sm)	805,70 (7)	0,0125 (8)	(E1)	0,001400 (42)	0,176 (5)	0,0374 (11)	0,001600 (48)
$\gamma_{5,0}$(Sm)	810,453 (5)	0,318 (3)	(E2)	0,0033 (1)	0,493 (15)	0,1070 (32)	0,00400 (12)
$\gamma_{16,5}$(Sm)	839,36 (4)	0,0161 (8)	(E1)	0,001200 (36)	0,1620 (49)	0,0345 (10)	0,001500 (45)
$\gamma_{6,1}$(Sm)	841,576 (5)	0,163 (2)	E1	0,001200 (36)	0,1610 (48)	0,0343 (10)	0,001500 (45)
$\gamma_{10,2}$(Sm)	867,383 (3)	4,258 (23)	E2+2%M1	0,00290 (9)	0,423 (13)	0,0913 (27)	0,0035 (1)
$\gamma_{(-1,11)}$(Sm)	896,58 (9)	0,0669 (21)					
$\gamma_{7,1}$(Sm)	901,184 (11)	0,084 (3)	E2	0,00260 (8)	0,382 (11)	0,0824 (25)	0,00310 (9)
$\gamma_{15,4}$(Sm)	906,01 (6)	0,016 (1)					
$\gamma_{8,1}$(Sm)	919,340 (4)	0,430 (4)	E1	0,00100 (3)	0,135 (4)	0,0288 (9)	0,001200 (36)
$\gamma_{11,2}$(Sm)	926,320 (15)	0,274 (4)	(E2)	0,00250 (8)	0,358 (11)	0,0772 (23)	0,00290 (9)
$\gamma_{4,0}$(Gd)	930,58 (15)	0,0731 (19)	(E2)	0,00270 (8)	0,400 (12)	0,0872 (26)	0,0032 (1)
$\gamma_{15,3}$(Gd)	937,053 (15)	0,0027 (6)	(M1+50%E2)	0,00370 (11)	0,516 (15)	0,1120 (34)	0,00430 (13)
$\gamma_{19,5}$(Sm)	958,63 (5)	0,0211 (19)	(M1+E2)	0,00310 (9)			0,00360 (11)
$\gamma_{6,0}$(Sm)	963,393 (12)	0,1342 (20)	E1	0,00100 (3)	0,1230 (37)	0,0263 (8)	0,001100 (33)
$\gamma_{9,1}$(Sm)	964,082 (18)	14,54 (7)	E2(+M1)	0,00230 (7)	0,327 (10)	0,0703 (21)	0,00270 (8)
$\gamma_{10,1}$(Gd)	974,09 (4)	0,0139 (8)	M1+50%E2+E0	0,0048 (5)			0,0056 (6)
$\gamma_{13,2}$(Gd)	990,19 (3)	0,0315 (13)	(E2)	0,00240 (7)	0,347 (10)	0,0755 (23)	0,00300 (9)
$\gamma_{(-1,12)}$(Sm)	1001,1 (3)	0,0046 (10)					
$\gamma_{12,2}$(Sm)	1005,276 (17)	0,667 (23)		0,00220 (7)	0,311 (9)	0,0669 (20)	0,00260 (8)
$\gamma_{(-1,15)}$(Sm)	1084 (1)	0,244 (8)					
$\gamma_{9,0}$(Sm)	1085,841 (10)	10,15 (6)	E2	0,00180 (5)	0,250 (8)	0,0536 (16)	0,00210 (6)
$\gamma_{11,1}$(Gd)	1089,741 (5)	1,735 (10)	(M1)+E2	0,00200 (6)			0,00230 (7)
$\gamma_{6,0}$(Gd)	1109,178 (12)	0,186 (4)	E2	0,00190 (6)	0,269 (8)	0,0584 (18)	0,00220 (7)
$\gamma_{10,1}$(Sm)	1112,080 (3)	13,44 (6)	E2(+1%M1)	0,00170 (5)	0,238 (7)	0,0511 (15)	0,00200 (6)
$\gamma_{(-1,13)}$(Sm)	1139 (1)	0,0013 (3)					
$\gamma_{11,1}$(Sm)	1170,93 (11)	0,0366 (13)	(M1+50%E2)	0,00200 (6)	0,265 (8)	0,0567 (17)	0,00230 (7)
$\gamma_{12,1}$(Gd)	1206,11 (15)	0,0138 (8)	(E2)	0,001600 (48)	0,225 (7)	0,0487 (15)	0,00190 (6)
$\gamma_{14,2}$(Sm)	1212,953 (11)	1,417 (9)	E1	0,000600 (18)	0,0802 (24)	0,0170 (5)	0,000700 (21)
$\gamma_{12,1}$(Sm)	1249,944 (13)	0,187 (3)	E2	0,001400 (42)	0,184 (6)	0,0395 (12)	0,001600 (48)
$\gamma_{13,1}$(Gd)	1261,349 (23)	0,0337 (11)	M1	0,00230 (7)	0,313 (9)	0,0676 (20)	0,00270 (8)
$\gamma_{11,0}$(Sm)	1292,784 (19)	0,104 (3)	(E2)	0,001300 (39)	0,172 (5)	0,0368 (11)	0,001500 (45)
$\gamma_{14,1}$(Gd)	1299,148 (8)	1,634 (9)	E1(+0,2%M2)	0,000600 (18)	0,0803 (24)	0,0172 (5)	0,000700 (21)
$\gamma_{9,0}$(Gd)	1314,7 (2)	0,0048 (6)	E1	0,000600 (18)	0,0773 (23)	0,0166 (5)	0,000700 (21)
$\gamma_{15,1}$(Gd)	1348,10 (7)	0,0175 (8)	E2+(0,6%M1)	0,001300 (39)	0,179 (5)	0,0387 (12)	0,001600 (48)
$\gamma_{17,2}$(Sm)	1363,77 (5)	0,0257 (8)	M1(+E2)	0,00170 (5)	0,222 (7)	0,0474 (14)	0,00200 (6)
$\gamma_{18,2}$(Sm)	1390,36 (16)	0,0048 (6)	(M1+50%E2)	0,001400 (42)	0,180 (5)	0,0385 (12)	0,001600 (48)
$\gamma_{13,1}$(Sm)	1408,013 (3)	20,86 (9)	E1(+M2)	0,000500 (15)	0,0615 (18)	0,01310 (39)	0,000600 (18)
$\gamma_{14,1}$(Sm)	1457,651 (11)	0,498 (4)	E1	0,000500 (15)	0,0580 (17)	0,01230 (37)	0,000500 (15)
$\gamma_{16,1}$(Sm)	1528,111 (18)	0,281 (5)	E1	0,000400 (12)			0,000500 (15)
$\gamma_{13,0}$(Gd)	1605,61 (7)	0,0081 (4)	(E2)	0,000900 (27)			0,000900 (27)
$\gamma_{17,1}$(Sm)	1608,36 (8)	0,0053 (3)	(E1)	0,000400 (12)			0,000400 (12)
$\gamma_{18,1}$(Sm)	1635,2 (5)	0,00015 (5)	(M1+50%E2)	0,00100 (3)			0,00100 (3)
$\gamma_{14,0}$(Gd)	1643,6 (1)	0,0015 (4)	(M2)	0,00280 (8)			0,0032 (1)
$\gamma_{19,1}$(Sm)	1647,41 (14)	0,0064 (4)	(E2)	0,000800 (24)			0,000800 (24)
$\gamma_{(-1,14)}$(Sm)	1674,30 (6)	0,0060 (8)					
$\gamma_{19,0}$(Sm)	1769,09 (5)	0,0092 (3)	(E2)	0,000700 (21)			0,000700 (21)

3 Atomic Data

3.1 Sm

ω_K	:	0,926	(4)
$\bar{\omega}_L$	:	0,158	(6)
n_{KL}	:	0,857	(4)

3.1.1 X Radiations

		Energy keV		Relative probability
X_K				
	$K\alpha_2$	39,5229		55,25
	$K\alpha_1$	40,1186		100
	$K\beta_3$	45,289	}	
	$K\beta_1$	45,413	}	
	$K\beta_5''$	45,731	}	31,23
	$K\beta_2$	46,575	}	
	$K\beta_4$	46,705	}	8,06
	$KO_{2,3}$	46,813	}	
X_L				
	$L\alpha$	5,61 – 5,64		
	$L\gamma$	– 7,18		

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	31,190 – 33,218	100
KLX	37,302 – 40,097	50,7
KXY	43,39 – 46,79	6,42
Auger L	0,08 – 7,69	1815

3.2 Gd

ω_K	:	0,932	(4)
$\bar{\omega}_L$	:	0,176	(6)
n_{KL}	:	0,850	(4)

3.2.1 X Radiations

		Energy keV		Relative probability
X_K				
	$K\alpha_2$	42,3093		55,59
	$K\alpha_1$	42,9967		100
	$K\beta_3$	48,556	}	
	$K\beta_1$	48,697	}	
	$K\beta_5''$	49,053	}	31,6
	$K\beta_2$	49,961	}	
	$K\beta_4$	50,099	}	8,31
	$KO_{2,3}$	50,219	}	
X_L				
	$L\alpha$	6,025 – 6,057		
	$L\gamma$	– 7,78		

3.2.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	33,310 – 35,562	100
KLX	39,907 – 42,976	51,3
KXY	46,48 – 50,20	6,58
Auger L	0,07 – 8,33	

4 Electron Emissions

		Energy keV		Electrons per 100 disint.
e_{AL}	(Sm)	0,08 - 7,69		67,7 (7)
e_{AK}	(Sm)			5,9 (4)
	KLL	31,190 - 33,218	}	
	KLX	37,302 - 40,097	}	
	KXY	43,39 - 46,79	}	
e_{AL}	(Gd)	0,07 - 8,33		0,800 (14)
e_{AK}	(Gd)			0,062 (4)
	KLL	33,310 - 35,562	}	
	KLX	39,907 - 42,976	}	
	KXY	46,48 - 50,20	}	
$ec_{1,0\ K}$	(Sm)	74,9475 (20)		19,2 (6)
$ec_{1,0\ L}$	(Sm)	114,045 - 115,066		10,7 (3)
$ec_{1,0\ M}$	(Sm)	120,059 - 120,702		2,48 (7)
$ec_{1,0\ N}$	(Sm)	121,436 - 121,776		0,57 (2)
$ec_{2,1\ K}$	(Sm)	197,8632 (20)		0,611 (19)
$ec_{2,1\ L}$	(Sm)	236,961 - 237,981		0,159 (5)
$ec_{1,0\ K}$	(Gd)	294,0394 (20)		0,86 (3)
$ec_{1,0\ L}$	(Gd)	335,903 - 337,036		0,190 (6)
$\beta^+_{0,1}$	max:	730,5 (7)		0,025 (15)
$\beta^+_{0,1}$	avg:	338,1 (3)		
$\beta^+_{0,2}$	max:	485,8 (7)		0,0024 (2)
$\beta^+_{0,2}$	avg:	230,7 (3)		
$\beta^-_{0,15}$	max:	126,4 (11)		0,0203 (11)
$\beta^-_{0,15}$	avg:	33,4 (3)		
$\beta^-_{0,14}$	max:	175,4 (11)		1,826 (21)
$\beta^-_{0,14}$	avg:	47,4 (4)		
$\beta^-_{0,13}$	max:	213,5 (11)		0,101 (3)
$\beta^-_{0,13}$	avg:	58,6 (4)		
$\beta^-_{0,12}$	max:	268,6 (11)		0,0536 (18)
$\beta^-_{0,12}$	avg:	75,2 (4)		
$\beta^-_{0,11}$	max:	384,8 (11)		2,44 (3)
$\beta^-_{0,11}$	avg:	112,3 (4)		
$\beta^-_{0,10}$	max:	500,3 (11)		0,0267 (17)
$\beta^-_{0,10}$	avg:	151,4 (4)		
$\beta^-_{0,9}$	max:	504,1 (11)		0,0048 (7)
$\beta^-_{0,9}$	avg:	152,7 (4)		
$\beta^-_{0,8}$	max:	536,5 (11)		0,037 (8)
$\beta^-_{0,8}$	avg:	164,1 (4)		

		Energy keV		Electrons per 100 disint.
$\beta^-_{0,7}$	max:	695,6	(11)	13,80 (15)
$\beta^-_{0,7}$	avg:	221,7	(4)	
$\beta^-_{0,6}$	max:	709,7	(11)	0,245 (8)
$\beta^-_{0,6}$	avg:	226,9	(5)	
$\beta^-_{0,4}$	max:	888,2	(11)	0,303 (7)
$\beta^-_{0,4}$	avg:	295,1	(5)	
$\beta^-_{0,3}$	max:	1063,4	(11)	0,904 (14)
$\beta^-_{0,3}$	avg:	364,6	(5)	
$\beta^-_{0,1}$	max:	1474,5	(11)	8,17 (11)
$\beta^-_{0,1}$	avg:	535,4	(5)	

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV		Photons per 100 disint.	
XL	(Sm)	5,61 — 7,18		13,0 (4)	
XKα_2	(Sm)	39,5229		20,8 (3)	} Kα
XKα_1	(Sm)	40,1186		37,7 (5)	}
XKβ_3	(Sm)	45,289	}		
XKβ_1	(Sm)	45,413	}	11,78 (19)	K$'\beta_1$
XKβ_5''	(Sm)	45,731	}		
XKβ_2	(Sm)	46,575	}		
XKβ_4	(Sm)	46,705	}	3,04 (8)	K$'\beta_2$
XKO$_{2,3}$	(Sm)	46,813	}		
XL	(Gd)	6,025 — 7,78		0,177 (5)	
XKα_2	(Gd)	42,3093		0,243 (7)	} Kα
XKα_1	(Gd)	42,9967		0,437 (12)	}
XKβ_3	(Gd)	48,556	}		
XKβ_1	(Gd)	48,697	}	0,138 (4)	K$'\beta_1$
XKβ_5''	(Gd)	49,053	}		
XKβ_2	(Gd)	49,961	}		
XKβ_4	(Gd)	50,099	}	0,0363 (13)	K$'\beta_2$
XKO$_{2,3}$	(Gd)	50,219	}		

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{1,0}$(Sm)	121,7817 (3)	28,41 (13)
$\gamma_{5,3}$(Sm)	125,69 (13)	0,019 (6)
$\gamma_{10,9}$(Sm)	148,010 (17)	0,035 (5)
$\gamma_{7,4}$(Gd)	192,6 (4)	0,0068 (2)
$\gamma_{14,12}$(Sm)	207,6 (3)	0,0059 (4)
$\gamma_{14,11}$(Gd)	209,41 (13)	0,0055 (5)
$\gamma_{7,5}$(Sm)	212,568 (15)	0,0196 (6)
$\gamma_{(-1,0)}$(Sm)	237,31 (5)	0,0025 (8)
$\gamma_{19,13}$(Sm)	239,42 (17)	0,008 (3)
$\gamma_{2,1}$(Sm)	244,6974 (8)	7,55 (4)
$\gamma_{11,8}$(Sm)	251,633 (10)	0,0671 (15)
$\gamma_{11,7}$(Sm)	269,86 (6)	0,0060 (24)
$\gamma_{2,1}$(Gd)	271,131 (8)	0,078 (3)
$\gamma_{9,5}$(Sm)	275,449 (15)	0,0323 (17)
$\gamma_{12,9}$(Sm)	285,98 (3)	0,0100 (6)
$\gamma_{13,10}$(Sm)	295,9387 (17)	0,442 (3)
$\gamma_{4,2}$(Gd)	315,174 (17)	0,0496 (17)
$\gamma_{7,4}$(Sm)	316,2 (2)	0,0031 (10)
$\gamma_{(-1,1)}$(Sm)	320,03 (15)	0,0017 (6)
$\gamma_{11,6}$(Gd)	324,83 (3)	0,0738 (15)
$\gamma_{11,6}$(Sm)	329,425 (21)	0,129 (6)
$\gamma_{12,8}$(Sm)	330,54 (10)	0,0060 (17)
$\gamma_{4,2}$(Sm)	340,40 (14)	0,031 (3)
$\gamma_{1,0}$(Gd)	344,2785 (12)	26,59 (12)
$\gamma_{8,4}$(Gd)	351,66 (4)	0,0140 (22)
$\gamma_{16,11}$(Sm)	357,26 (5)	0,0040 (5)
$\gamma_{7,3}$(Gd)	367,7891 (20)	0,862 (5)
$\gamma_{(-1,2)}$(Sm)	379,37 (6)	0,00083 (21)
$\gamma_{18,12}$(Sm)	385,69 (20)	0,0050 (6)
$\gamma_{10,4}$(Gd)	387,90 (8)	0,00296 (21)
$\gamma_{(-1,3)}$(Sm)	391,32 (14)	0,00125 (21)
$\gamma_{(-1,4)}$(Sm)	406,74 (15)	0,00083 (21)
$\gamma_{3,1}$(Gd)	411,1165 (12)	2,238 (10)
$\gamma_{16,10}$(Sm)	416,048 (8)	0,1090 (17)
$\gamma_{10,5}$(Sm)	423,45 (4)	0,0032 (5)
$\gamma_{12,6}$(Gd)	440,86 (10)	0,0133 (10)
$\gamma_{5,2}$(Sm)	443,965 (3)	0,32 (2)
$\gamma_{13,9}$(Sm)	443,965 (3)	2,80 (2)
$\gamma_{13,7}$(Gd)	482,31 (3)	0,00139 (6)
$\gamma_{11,5}$(Sm)	482,31 (3)	0,0279 (16)
$\gamma_{13,8}$(Sm)	488,6792 (20)	0,4139 (24)
$\gamma_{6,2}$(Gd)	493,508 (20)	0,009 (2)
$\gamma_{14,9}$(Sm)	493,508 (20)	0,0278 (30)
$\gamma_{13,6}$(Gd)	496,39 (3)	0,0042 (4)
$\gamma_{17,10}$(Sm)	496,39 (3)	0,0049 (5)

	Energy keV	Photons per 100 disint.
$\gamma_{11,4}$(Gd)	503,474 (5)	0,1533 (18)
$\gamma^{\pm}$	511	0,054 (30)
$\gamma_{14,7}$(Gd)	520,227 (5)	0,0536 (13)
$\gamma_{18,10}$(Sm)	523,13 (5)	0,0113 (21)
$\gamma_{8,3}$(Gd)	526,881 (20)	0,0129 (6)
$\gamma_{14,6}$(Gd)	534,245 (7)	0,0368 (19)
$\gamma_{(-1,5)}$(Sm)	535,4 (4)	0,0060 (16)
$\gamma_{14,8}$(Sm)	538,29 (6)	0,0042 (6)
$\gamma_{14,7}$(Sm)	556,56 (3)	0,0177 (11)
$\gamma_{13,5}$(Gd)	557,91 (17)	0,0044 (7)
$\gamma_{12,5}$(Sm)	561,2 (5)	0,00108 (21)
$\gamma_{3,1}$(Sm)	562,93 (2)	0,038 (13)
$\gamma_{16,9}$(Sm)	563,990 (7)	0,457 (13)
$\gamma_{13,6}$(Sm)	566,442 (5)	0,131 (4)
$\gamma_{15,8}$(Sm)	571,83 (8)	0,0048 (8)
$\gamma_{4,1}$(Gd)	586,265 (3)	0,462 (4)
$\gamma_{(-1,6)}$(Sm)	595,61 (1)	0,0031 (17)
$\gamma_{14,6}$(Sm)	616,05 (3)	0,0092 (6)
$\gamma_{17,9}$(Sm)	644,37 (5)	0,0063 (6)
$\gamma_{7,2}$(Sm)	656,489 (5)	0,1437 (18)
$\gamma_{12,4}$(Sm)	664,78 (5)	0,010 (3)
$\gamma_{18,9}$(Sm)	671,155 (17)	0,0194 (13)
$\gamma_{8,2}$(Sm)	674,675 (3)	0,170 (4)
$\gamma_{13,4}$(Gd)	674,677 (3)	0,0171 (18)
$\gamma_{11,3}$(Gd)	678,623 (5)	0,470 (4)
$\gamma_{(-1,7)}$(Sm)	683,32 (11)	0,0031 (8)
$\gamma_{16,6}$(Sm)	686,61 (5)	0,0200 (17)
$\gamma_{5,1}$(Sm)	688,670 (5)	0,841 (6)
$\gamma_{(-1,8)}$(Sm)	696,87 (19)	0,0029 (10)
$\gamma_{10,2}$(Gd)	703,25 (6)	0,0035 (9)
$\gamma_{5,1}$(Gd)	703,25 (6)	0,0018 (9)
$\gamma_{14,4}$(Gd)	712,843 (6)	0,0961 (19)
$\gamma_{13,5}$(Sm)	719,349 (4)	0,059 (7)
$\gamma_{9,2}$(Sm)	719,349 (4)	0,268 (13)
$\gamma_{19,8}$(Sm)	727,99 (14)	0,0106 (13)
$\gamma_{(-1,9)}$(Sm)	735,4 (1)	0,0058 (10)
$\gamma_{(-1,10)}$(Sm)	756,12 (9)	0,0054 (8)
$\gamma_{6,1}$(Gd)	764,900 (9)	0,190 (4)
$\gamma_{14,5}$(Sm)	768,944 (9)	0,088 (3)
$\gamma_{7,1}$(Gd)	778,9045 (24)	12,97 (6)
$\gamma_{12,3}$(Gd)	794,81 (3)	0,0263 (10)
$\gamma_{19,6}$(Sm)	805,70 (7)	0,0125 (8)
$\gamma_{5,0}$(Sm)	810,451 (5)	0,317 (3)
$\gamma_{16,5}$(Sm)	839,36 (4)	0,0160 (8)
$\gamma_{6,1}$(Sm)	841,574 (5)	0,163 (2)
$\gamma_{10,2}$(Sm)	867,380 (3)	4,243 (23)
$\gamma_{(-1,11)}$(Sm)	896,58 (9)	0,0669 (21)

	Energy keV	Photons per 100 disint.
$\gamma_{7,1}$(Sm)	901,181 (11)	0,084 (3)
$\gamma_{15,4}$(Sm)	906,01 (6)	0,016 (1)
$\gamma_{8,1}$(Sm)	919,337 (4)	0,429 (5)
$\gamma_{11,2}$(Sm)	926,317 (15)	0,273 (4)
$\gamma_{4,0}$(Gd)	930,58 (15)	0,0729 (19)
$\gamma_{15,3}$(Gd)	937,050 (15)	0,0027 (6)
$\gamma_{19,5}$(Sm)	958,63 (5)	0,0210 (19)
$\gamma_{6,0}$(Sm)	963,390 (12)	0,1341 (20)
$\gamma_{9,1}$(Sm)	964,079 (18)	14,50 (6)
$\gamma_{10,1}$(Gd)	974,09 (4)	0,0138 (8)
$\gamma_{13,2}$(Gd)	990,19 (3)	0,0315 (13)
$\gamma_{(-1,12)}$(Sm)	1001,1 (3)	0,0046 (10)
$\gamma_{12,2}$(Sm)	1005,272 (17)	0,665 (23)
$\gamma_{(-1,15)}$(Sm)	1084 (1)	0,244 (8)
$\gamma_{9,0}$(Sm)	1085,837 (10)	10,13 (6)
$\gamma_{11,1}$(Gd)	1089,737 (5)	1,73 (1)
$\gamma_{6,0}$(Gd)	1109,174 (12)	0,186 (4)
$\gamma_{10,1}$(Sm)	1112,076 (3)	13,41 (6)
$\gamma_{(-1,13)}$(Sm)	1139 (1)	0,0013 (3)
$\gamma_{11,1}$(Sm)	1170,93 (11)	0,0365 (13)
$\gamma_{12,1}$(Gd)	1206,11 (15)	0,0135 (8)
$\gamma_{14,2}$(Sm)	1212,948 (11)	1,416 (9)
$\gamma_{12,1}$(Sm)	1249,938 (13)	0,186 (3)
$\gamma_{13,1}$(Gd)	1261,343 (23)	0,0336 (11)
$\gamma_{11,0}$(Sm)	1292,778 (19)	0,104 (3)
$\gamma_{14,1}$(Gd)	1299,142 (8)	1,633 (9)
$\gamma_{9,0}$(Gd)	1314,7 (2)	0,0048 (6)
$\gamma_{15,1}$(Gd)	1348,10 (7)	0,0175 (8)
$\gamma_{17,2}$(Sm)	1363,77 (5)	0,0256 (8)
$\gamma_{18,2}$(Sm)	1390,36 (16)	0,0048 (6)
$\gamma_{13,1}$(Sm)	1408,013 (3)	20,85 (8)
$\gamma_{14,1}$(Sm)	1457,643 (11)	0,498 (4)
$\gamma_{16,1}$(Sm)	1528,103 (18)	0,281 (5)
$\gamma_{13,0}$(Gd)	1605,61 (7)	0,0081 (4)
$\gamma_{17,1}$(Sm)	1608,36 (8)	0,0053 (3)
$\gamma_{18,1}$(Sm)	1635,2 (5)	0,00015 (5)
$\gamma_{14,0}$(Gd)	1643,6 (1)	0,0015 (4)
$\gamma_{19,1}$(Sm)	1647,41 (14)	0,0064 (4)
$\gamma_{(-1,14)}$(Sm)	1674,30 (6)	0,0060 (8)
$\gamma_{19,0}$(Sm)	1769,09 (5)	0,0092 (3)

6 Main Production Modes

Eu – 151(n,γ)Eu – 152

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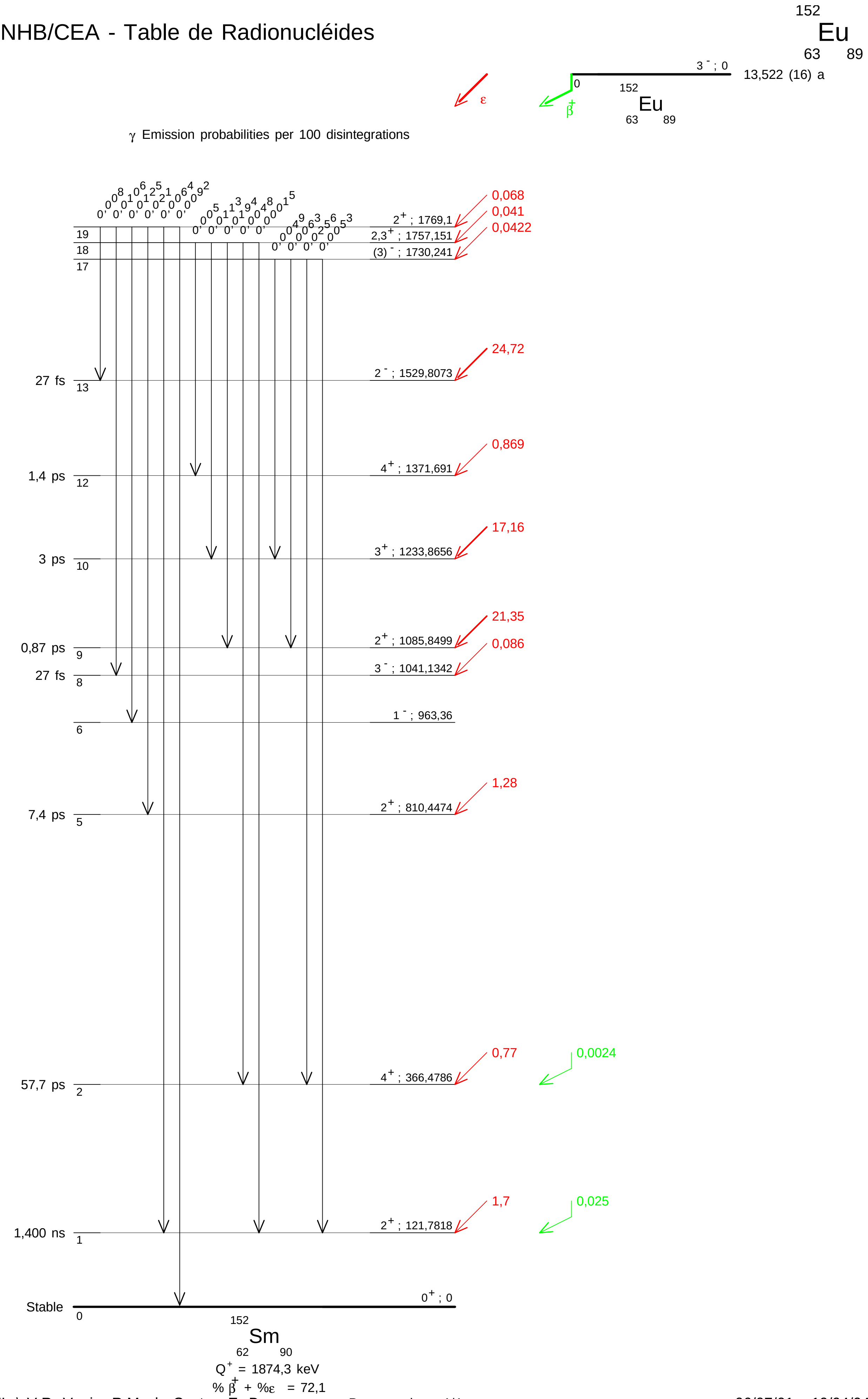
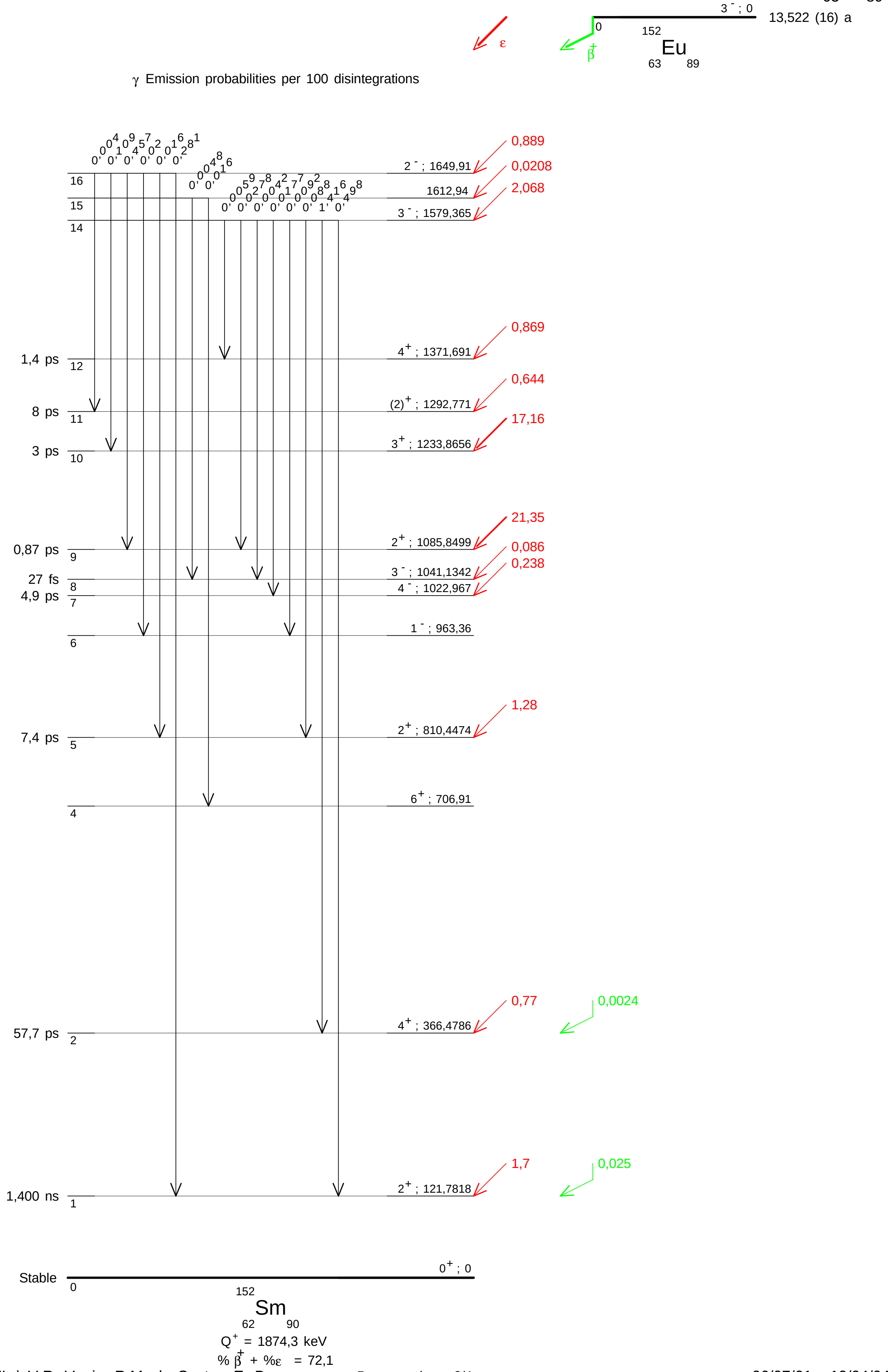
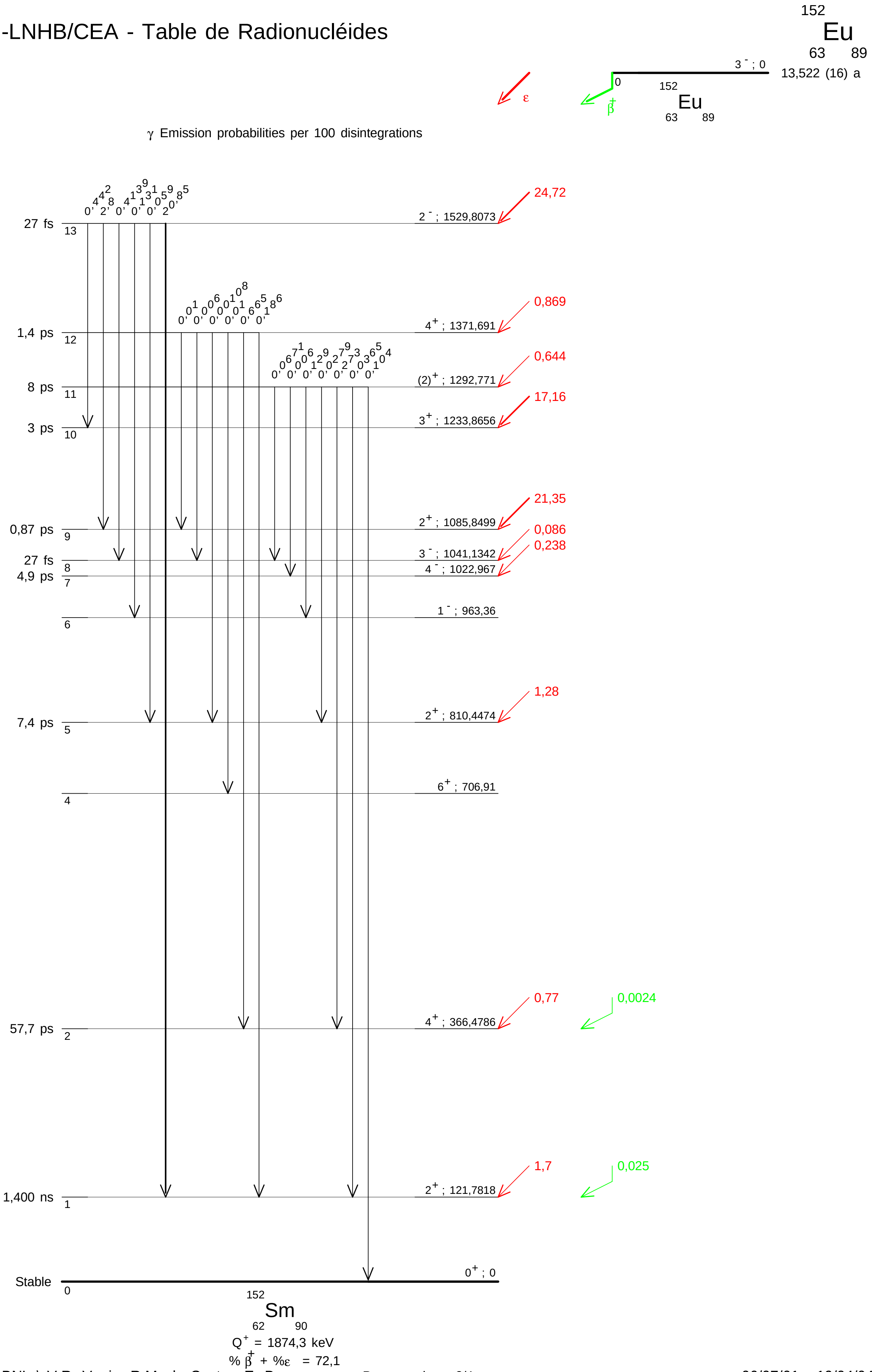


152 Eu 63 89
3⁻ ; 0
13,522 (16) a
ε
β+
0
152 Eu 63 89
γ Emission probabilities per 100 disintegrations
2+ ; 1769,1
2,3+ ; 1757,151
(3)⁻ ; 1730,241
0,068
0,041
0,0422
19
18
17
27 fs
13
2⁻ ; 1529,8073
24,72
1,4 ps
12
4+ ; 1371,691
0,869
3 ps
10
3+ ; 1233,8656
17,16
0,87 ps
9
2+ ; 1085,8499
21,35
27 fs
8
3⁻ ; 1041,1342
0,086
6
1⁻ ; 963,36
7,4 ps
5
2+ ; 810,4474
1,28
57,7 ps
2
4+ ; 366,4786
0,77
0,0024
1,400 ns
1
2+ ; 121,7818
1,7
0,025
Stable
0
0+ ; 0
152 Sm 62 90
Q+ = 1874,3 keV
% β+ + %ε = 72,1

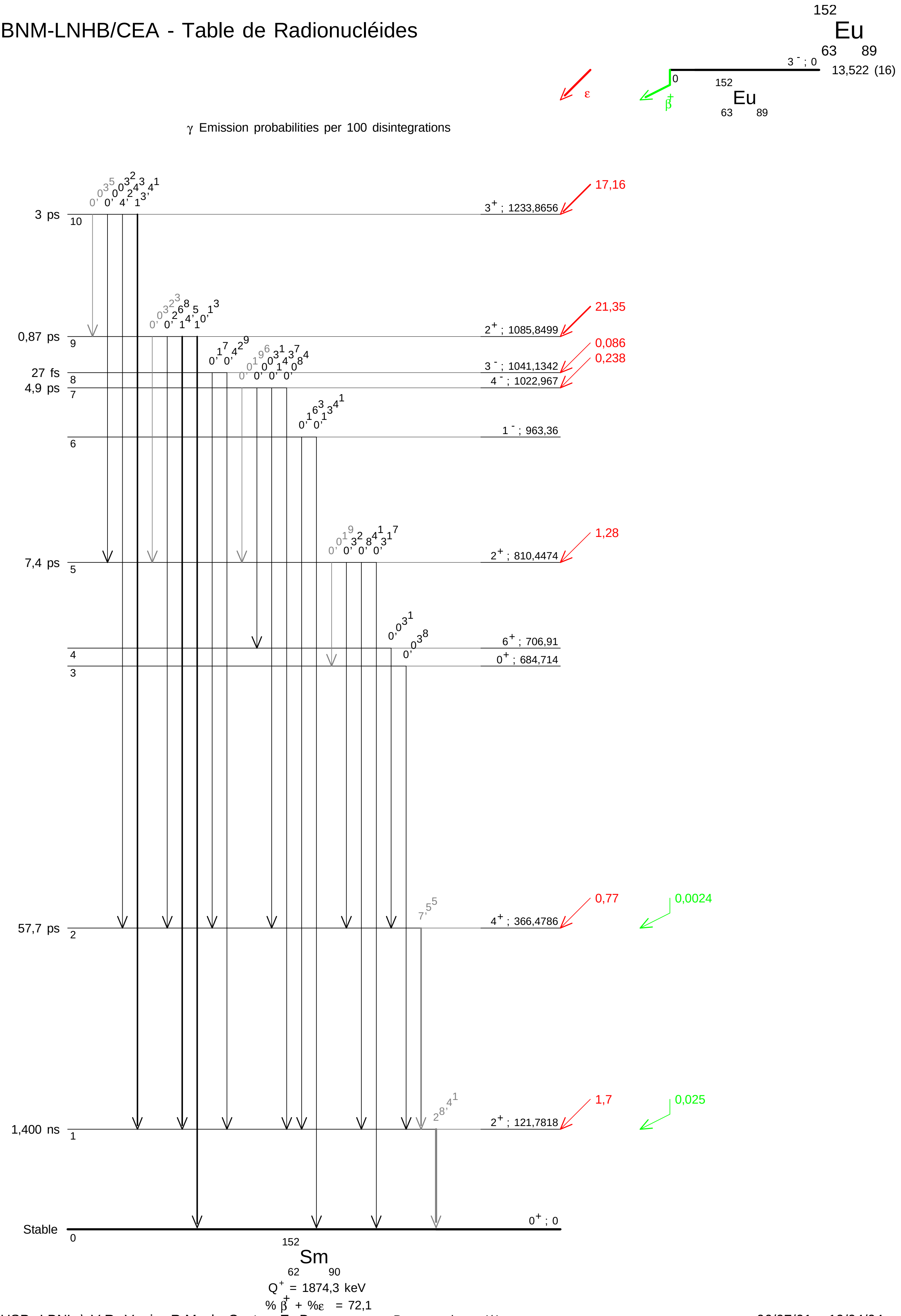
$^{152}_{63}Eu_{89}$

γ Emission probabilities per 100 disintegrations

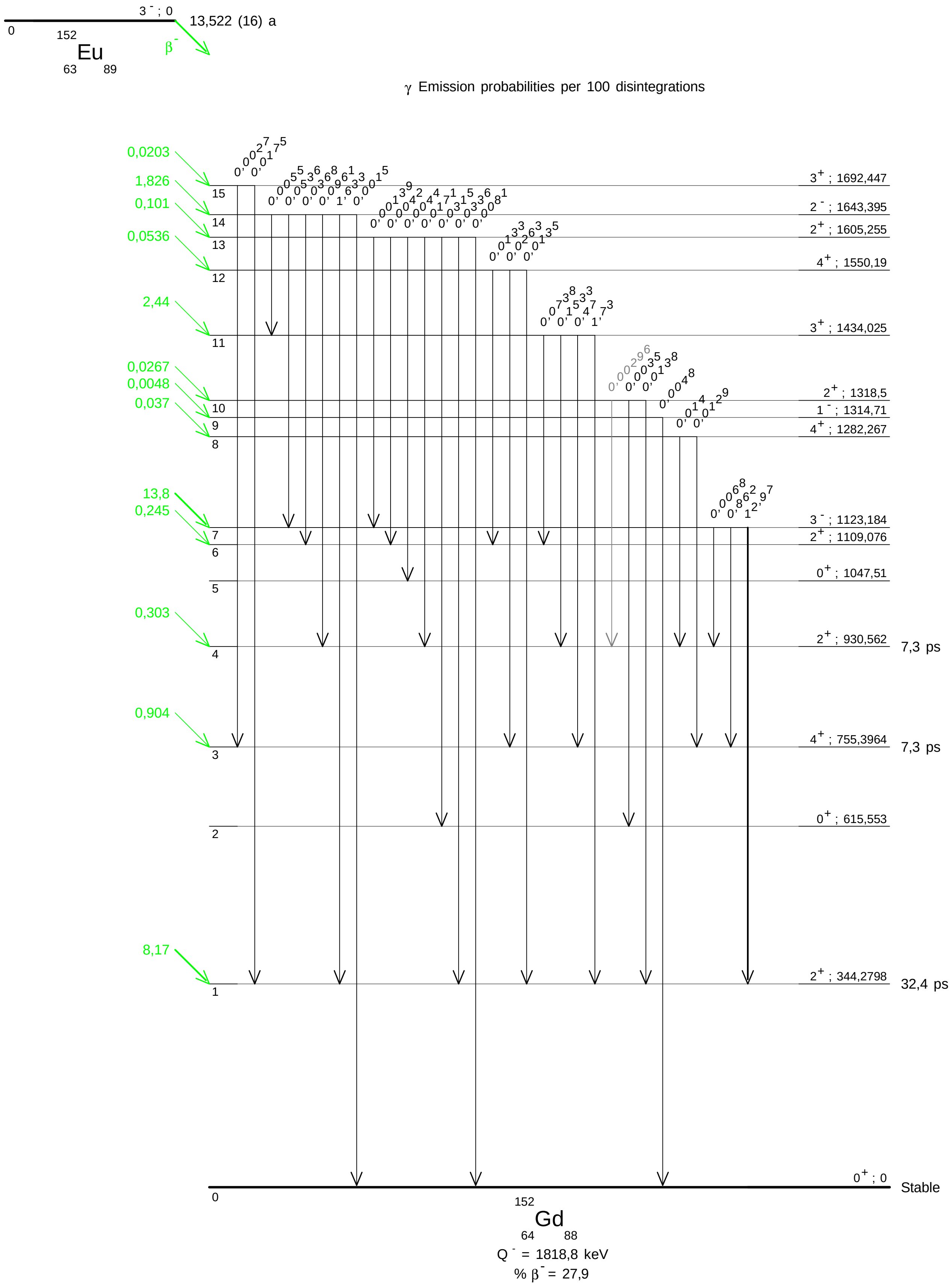




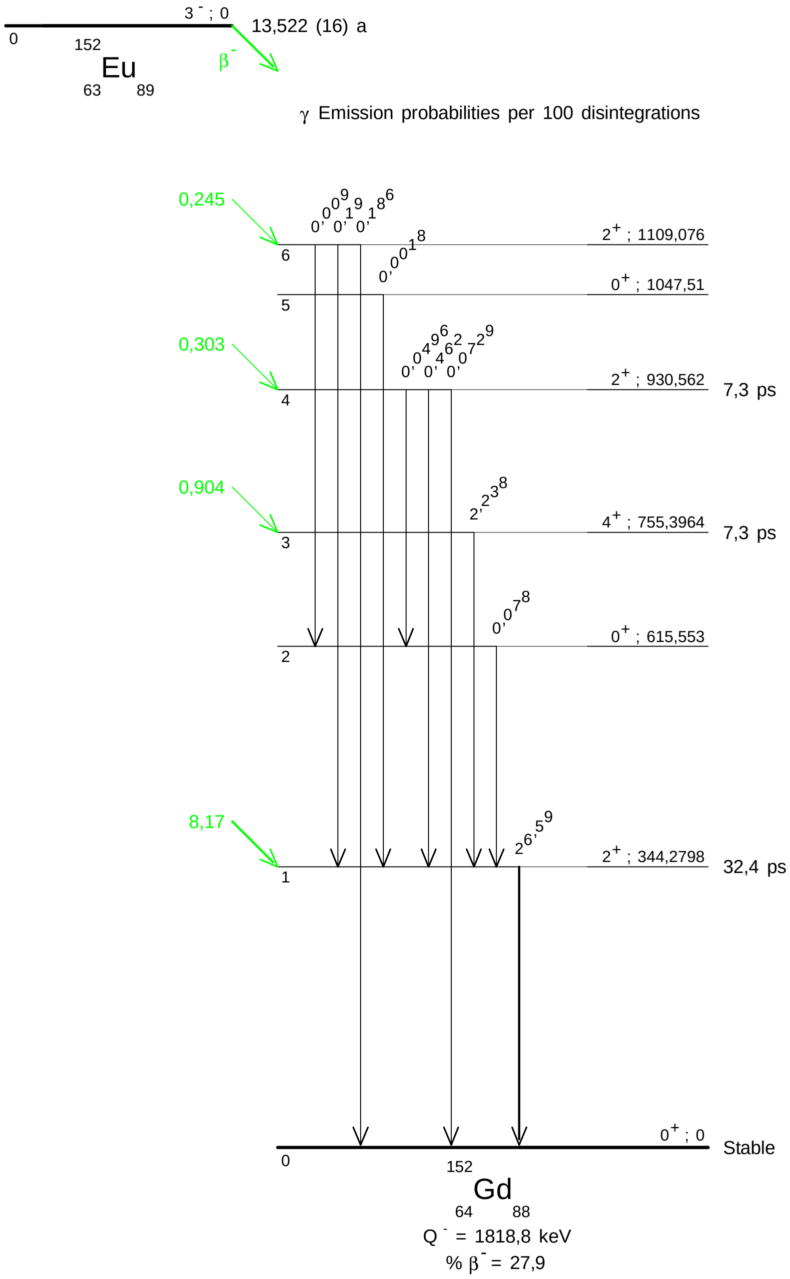
152 Eu 63 89
3 - ; 0
13,522 (16) a
ε
β+
0
152 Eu 63 89
γ Emission probabilities per 100 disintegrations
27 fs 13 2 - ; 1529,8073 24,72
1,4 ps 12 4+ ; 1371,691 0,869
8 ps 11 (2)+ ; 1292,771 0,644
3 ps 10 3+ ; 1233,8656 17,16
0,87 ps 9 2+ ; 1085,8499 21,35
27 fs 8 3 - ; 1041,1342 0,086
4,9 ps 7 4 - ; 1022,967 0,238
6 1 - ; 963,36
7,4 ps 5 2+ ; 810,4474 1,28
4 6+ ; 706,91
57,7 ps 2 4+ ; 366,4786 0,77 0,0024
1,400 ns 1 2+ ; 121,7818 1,7 0,025
Stable 0 0+ ; 0
152 Sm 62 90
Q+ = 1874,3 keV
% β+ + %ε = 72,1



152 Eu 63 89
3 - ; 0
13,522 (16)
ε
β+
152 Eu 63 89
γ Emission probabilities per 100 disintegrations
3+ ; 1233,8656
2+ ; 1085,8499
3 - ; 1041,1342
4 - ; 1022,967
1 - ; 963,36
2+ ; 810,4474
6+ ; 706,91
0+ ; 684,714
4+ ; 366,4786
2+ ; 121,7818
0+ ; 0
17,16
21,35
0,086
0,238
1,28
0,77
0,0024
1,7
0,025
3 ps
0,87 ps
27 fs
4,9 ps
7,4 ps
57,7 ps
1,400 ns
Stable
152 Sm 62 90
Q+ = 1874,3 keV
% β+ + %ε = 72,1



3⁻ ; 0
13,522 (16) a
0
152 Eu 63 89
β⁻
γ Emission probabilities per 100 disintegrations
0,0203
1,826
0,101
0,0536
2,44
0,0267
0,0048
0,037
13,8
0,245
0,303
0,904
8,17
3⁺ ; 1692,447
2⁻ ; 1643,395
2⁺ ; 1605,255
4⁺ ; 1550,19
3⁺ ; 1434,025
2⁺ ; 1318,5
1⁻ ; 1314,71
4⁺ ; 1282,267
3⁻ ; 1123,184
2⁺ ; 1109,076
0⁺ ; 1047,51
2⁺ ; 930,562
7,3 ps
4⁺ ; 755,3964
7,3 ps
0⁺ ; 615,553
2⁺ ; 344,2798
32,4 ps
0⁺ ; 0
Stable
152 Gd 64 88
Q⁻ = 1818,8 keV
% β⁻ = 27,9


3 - ; 0
13,522 (16) a
0
152
Eu
63 89
β-
γ Emission probabilities per 100 disintegrations
0,245
0,303
0,904
8,17
2+ ; 1109,076
0+ ; 1047,51
2+ ; 930,562
7,3 ps
4+ ; 755,3964
7,3 ps
0+ ; 615,553
2+ ; 344,2798
32,4 ps
0+ ; 0
Stable
0,018
2,238
0,078
26,59
6
5
4
3
2
1
0
152
Gd
64 88
Q - = 1818,8 keV
% β- = 27,9