

# 1 Supplemental Material

The lifetimes and gamma-ray branching ratios listed in these tables were used for all calculations of measured cross sections reported in this work, and have been taken from the most recent edition of Nuclear Data Sheets for each mass chain [14, 15, 23–38].

Nuclide	Half-life	$E_\gamma$ (keV)	$I_\gamma$ (%)	Nuclide	Half-life	$E_\gamma$ (keV)	$I_\gamma$ (%)
$^{43}\text{K}$	22.3(1) h	372.760	86.8(2)		77.236(26) d	2034.791	7.77(3)
	22.3(1) h	617.490	79.2(6)		77.236(26) d	2113.135	0.377(3)
$^{44\text{g}}\text{Sc}$	3.97(4) h	1157.020	99.9(4)		77.236(26) d	2212.944	0.388(4)
	3.97(4) h	1499.46	0.908(15)		77.236(26) d	2276.131	0.118(4)
$^{44\text{m}}\text{Sc}$	58.61(10) h	271.241	86.7(3)		77.236(26) d	2598.500	16.97(4)
	58.61(10) h	1001.83	1.20(7)		77.236(26) d	3009.645	1.036(13)
	58.61(10) h	1126.06	1.20(7)	$^{56}\text{Mn}$	2.5789(1) h	846.7638	98.85(3)
$^{46}\text{Sc}$	83.79(4) d	889.277	99.9840(10)	$^{57}\text{Co}$	271.74(6) d	122.06065	85.60(17)
	83.79(4) d	1120.545	99.9870(10)		271.74(6) d	136.47356	10.68(8)
$^{47}\text{Sc}$	3.3492(6) d	159.381	68.3(4)		271.74(6) d	352.33	0.0030(3)
$^{48}\text{Cr}$	21.56(3) h	112.31	96.0(20)		271.74(6) d	692.41	0.149(10)
	21.56(3) h	308.24	100(2)	$^{57}\text{Ni}$	35.60(6) h	1377.63	81.7(24)
$^{48}\text{Sc}$	43.67(9) h	175.361	7.48(10)		35.60(6) h	1919.52	12.3(4)
	43.67(9) h	1037.522	97.6(7)	$^{58\text{g}}\text{Co}$	70.86(6) d	810.7593	99.45(1)
$^{48}\text{V}$	15.9735(25) d	928.327	0.783(3)		70.86(6) d	863.951	0.686(10)
	15.9735(25) d	944.130	7.870(7)		70.86(6) d	1674.725	0.517(10)
	15.9735(25) d	2240.396	2.333(13)	$^{58\text{m}}\text{Co}$	9.10(9) h	—	—
$^{49}\text{Cr}$	42.3(1) m	62.289	16.4(6)	$^{60}\text{Cu}$	1925.28(14) d	1173.228	99.85(3)
	42.3(1) m	90.639	53.2(19)		1925.28(14) d	1332.492	99.9826(6)
	42.3(1) m	152.928	30.3(11)		23.7(4) m	467.3	3.52(18)
$^{51}\text{Cr}$	27.704(3) d	320.0824	9.910(10)		23.7(4) m	826.4	21.7(11)
$^{51}\text{Mn}$	46.2(1) m	749.07	0.265(7)		23.7(4) m	952.4	2.73(18)
$^{52}\text{Fe}$	45.9(6) s	—	—		23.7(4) m	1035.2	3.70(18)
$^{52\text{g}}\text{Mn}$	5.591(3) d	346.02	0.980(14)		23.7(4) m	1173.2	0.26(9)
	5.591(3) d	600.16	0.390(11)		23.7(4) m	1293.7	1.85(18)
	5.591(3) d	647.47	0.400(20)		23.7(4) m	1332.5	88.0(1)
	5.591(3) d	744.233	90.0(12)		23.7(4) m	1791.6	45.4(23)
	5.591(3) d	935.544	94.5(13)		23.7(4) m	1861.6	4.8(3)
	5.591(3) d	1246.278	4.21(7)		23.7(4) m	1936.9	2.20(9)
	5.591(3) d	1333.649	5.07(7)		23.7(4) m	2158.9	3.34(18)
	5.591(3) d	1434.092	100.0(14)		23.7(4) m	2403.3	0.77(8)
$^{52\text{m}}\text{Mn}$	21.1(2) m	377.738	1.68(3)		23.7(4) m	3124.1	4.8(3)
$^{54}\text{Mn}$	312.20(20) d	834.848	99.9760(10)	$^{61}\text{Cu}$	3.339(8) h	67.412	4.2(8)
$^{55}\text{Co}$	17.53(3) h	91.9	1.16(9)		3.339(8) h	282.956	12.2(22)
	17.53(3) h	385.4	0.54(5)		3.339(8) h	373.050	2.1(4)
	17.53(3) h	477.2	20.2(17)		3.339(8) h	529.169	0.38(7)
	17.53(3) h	520.0	0.83(8)		3.339(8) h	588.605	1.17(21)
	17.53(3) h	803.7	1.87(15)		3.339(8) h	656.008	10.8(20)
	17.53(3) h	827.0	0.21(6)		3.339(8) h	816.692	0.31(6)
	17.53(3) h	931.1	75.0(35)		3.339(8) h	841.211	0.21(4)
	17.53(3) h	984.6	0.52(10)		3.339(8) h	1099.560	0.25(4)
	17.53(3) h	1212.8	0.26(3)		3.339(8) h	1132.351	0.090(17)
	17.53(3) h	1316.6	7.1(3)		3.339(8) h	1185.234	3.7(7)
	17.53(3) h	1408.5	16.9(8)		3.339(8) h	1446.492	0.045(8)
	17.53(3) h	2177.6	0.29(4)	$^{62}\text{Zn}$	9.193(15) h	40.85	25.5(24)
$^{56}\text{Co}$	77.236(26) d	733.514	0.191(3)		9.193(15) h	243.36	2.52(23)
	77.236(26) d	787.743	0.311(3)		9.193(15) h	246.95	1.90(18)
	77.236(26) d	847.770	99.9399(23)		9.193(15) h	260.43	1.35(13)
	77.236(26) d	977.372	1.421(6)		9.193(15) h	304.88	0.29(3)
	77.236(26) d	996.948	0.111(4)		9.193(15) h	349.60	0.45(4)
	77.236(26) d	1037.843	14.05(4)		9.193(15) h	394.03	2.24(17)
	77.236(26) d	1140.368	0.132(3)		9.193(15) h	548.35	15.3(14)
	77.236(26) d	1175.101	2.252(6)		9.193(15) h	596.56	26(2)
	77.236(26) d	1238.288	66.46(12)		9.193(15) h	637.41	0.25(3)
	77.236(26) d	1335.40	0.1224(12)	$^{63}\text{Zn}$	38.47(5) m	669.62	8.2(3)
	77.236(26) d	1360.212	4.283(12)		38.47(5) m	962.06	6.5(4)
	77.236(26) d	1442.746	0.180(4)		38.47(5) m	1412.08	0.75(4)
	77.236(26) d	1771.357	15.41(6)		38.47(5) m	1547.04	0.122(7)
	77.236(26) d	1810.757	0.640(3)		38.47(5) m	2336.5	0.075(6)
	77.236(26) d	1963.741	0.707(4)		38.47(5) m	2536.0	0.066(7)
	77.236(26) d	2015.215	3.016(12)	$^{64}\text{Cu}$	12.701(2) h	1345.77	0.475(11)