Cross sections for isotopic production in U+Be and U+Pb collisions at 750*A MeV from fission and fragmentation

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Table 1:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{49}Ca	48	5.	^{49}Ca		
^{50}Ca	14	2.	^{50}Ca		
^{51}Ca	2.7	0.2	^{51}Ca		
^{52}Ca	0.45	0.05	^{52}Ca		
^{53}Ca	0.036	0.007	^{53}Ca		
^{54}Ca	0.005	0.001	^{54}Ca		
^{55}Ca	0.002	0.0006	^{55}Ca		
^{56}Ca	0.001	0.0004	^{56}Ca		
^{51}Sc	160.	13.	^{51}Sc		
^{52}Sc	44.	3.	^{52}Sc		
^{53}Sc	14.	1.	^{53}Sc		
^{54}Sc	2.5	0.2	^{54}Sc		
^{55}Sc	0.40	0.04	^{55}Sc		
^{56}Sc	0.05	0.006	^{56}Sc		
^{57}Sc	0.01	0.001	^{57}Sc		
^{58}Sc	0.003	0.0006	^{58}Sc		
^{54}Ti	34.	3.	^{54}Ti		
^{55}Ti	7.4	0.2	^{55}Ti		
^{56}Ti	4.8	0.2	^{56}Ti		
^{57}Ti	0.72	0.04	^{57}Ti		
^{58}Ti	0.19	0.02	^{58}Ti		
^{59}Ti	0.05	0.01	^{59}Ti		
^{60}Ti	0.01	0.002	^{60}Ti		
^{61}Ti	0.0025	0.0008	^{61}Ti		

Table 2:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{56}V	68.	4.	^{56}V		
^{57}V	39.	3.	^{57}V		
^{58}V	9.2	0.4	^{58}V		
^{59}V	4.1	0.2	^{59}V		
^{60}V	0.51	0.04	^{60}V		
^{61}V	0.13	0.01	^{61}V		
^{62}V	0.021	0.003	^{62}V		
^{63}V	0.0064	0.0011	^{63}V		
^{64}V	0.0003	0.0003	^{64}V		
^{59}Cr	55.	4.	^{59}Cr		
^{60}Cr	25.	2.	^{60}Cr		
^{61}Cr	5.2	0.3	^{61}Cr		
^{62}Cr	2.3	0.2	^{62}Cr		
^{63}Cr	0.34	0.03	^{63}Cr		
^{64}Cr	0.072	0.013	^{64}Cr		
^{65}Cr	0.0078	0.0010	^{65}Cr		
^{66}Cr	0.0015	0.0005	^{66}Cr		
^{67}Cr	0.0005	0.0005	^{67}Cr		
^{61}Mn	126.	13.	^{61}Mn		
^{62}Mn	39.	3.	^{62}Mn		
^{63}Mn	24.	2.	^{63}Mn		
^{64}Mn	5.4	0.3	^{64}Mn		
^{65}Mn	1.6	0.1	^{65}Mn		
^{66}Mn	0.22	0.02	^{66}Mn		
^{67}Mn	0.04	0.005	^{67}Mn		
^{68}Mn	0.005	0.0009	^{68}Mn		
^{69}Mn	0.0004	0.0003	^{69}Mn		
^{63}Fe	270.	35.	^{63}Fe		
^{64}Fe	87.	4.	^{64}Fe		
^{65}Fe	37.	2.	^{65}Fe		
^{66}Fe	15.	1.	^{66}Fe		
^{67}Fe	4.9	0.4	^{67}Fe		
^{68}Fe	0.93	0.07	^{68}Fe		
^{69}Fe	0.23	0.03	^{69}Fe		
^{70}Fe	0.028	0.003	^{70}Fe		
^{71}Fe	0.0047	0.0009	^{71}Fe		
^{72}Fe	0.0003	0.0003	^{72}Fe		

Table 3:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{65}Co	194.	45.	^{65}Co		
^{66}Co	150.	8.	^{66}Co		
^{67}Co	72.	4.	^{67}Co		
^{68}Co	24.	2.	^{68}Co		
^{69}Co	12.	0.4	^{69}Co		
^{70}Co	3.1	0.1	^{70}Co		
^{71}Co	0.68	0.04	^{71}Co		
^{72}Co	0.10	0.01	^{72}Co		
^{73}Co	0.02	0.002	^{73}Co		
^{74}Co	0.002	0.0006	^{74}Co		
^{75}Co	0.0003	0.00015	^{75}Co		
^{68}Ni	119.	5.	^{68}Ni		
^{69}Ni	69.	2.	^{69}Ni		
^{70}Ni	35.	1.	^{70}Ni		
^{71}Ni	15.	0.5	^{71}Ni		
^{72}Ni	7.7	0.2	^{72}Ni		
^{73}Ni	2.5	0.1	^{73}Ni		
^{74}Ni	0.63	0.03	^{74}Ni		
^{75}Ni	0.086	0.004	^{75}Ni		
^{76}Ni	0.014	0.001	^{76}Ni		
^{77}Ni	0.0014	0.0004	^{77}Ni		
^{78}Ni	0.0002	0.0001	^{78}Ni		
^{70}Cu	220.	33.	^{70}Cu		
^{71}Cu	143.	17.	^{71}Cu		
^{72}Cu	77.	8.	^{72}Cu		
^{73}Cu	43.	4.	^{73}Cu		
^{74}Cu	20.	2.	^{74}Cu		
^{75}Cu	11.	1.	^{75}Cu		
^{76}Cu	2.7	0.3	^{76}Cu		
^{77}Cu	0.86	0.07	^{77}Cu		
^{78}Cu	0.11	0.01	^{78}Cu		
^{79}Cu	0.015	0.002	^{79}Cu		
^{80}Cu	0.001	0.0005	^{80}Cu		

Table 4:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{73}Zn	227	32.	^{73}Zn		
^{74}Zn	172.	24.	^{74}Zn		
^{75}Zn	94.	10.	^{75}Zn		
^{76}Zn	73.	10.	^{76}Zn		
^{77}Zn	32.	3.	^{77}Zn		
^{78}Zn	16.	2.	^{78}Zn		
^{79}Zn	4.5	0.4	^{79}Zn		
^{80}Zn	1.2	0.1	^{80}Zn		
^{81}Zn	0.13	0.01	^{81}Zn		
^{82}Zn	0.013	0.002	^{82}Zn		
^{83}Zn	0.001	0.0004	^{83}Zn		
^{76}Ga	242.	7.	^{76}Ga		
^{77}Ga	193.	4.	^{77}Ga		
^{78}Ga	144.	3.	^{78}Ga	790.	190.
^{79}Ga	106.	1.	^{79}Ga	550.	130.
^{80}Ga	51.	1.	^{80}Ga	320.	70.
^{81}Ga	22.	0.4	^{81}Ga	120.	10.
^{82}Ga	4.3	0.1	^{82}Ga	33.	9.
^{83}Ga	0.81	0.02	^{83}Ga		
^{84}Ga	0.10	0.005	^{84}Ga		
^{85}Ga	0.0065	0.0009	^{85}Ga		
^{86}Ga	0.0006	0.0003	^{86}Ga		
^{72}Ge			^{72}Ge	7300.	4000.
^{73}Ge			^{73}Ge		
^{74}Ge			^{74}Ge	10000.	1000.
^{75}Ge			^{75}Ge	8500.	800.
^{76}Ge			^{76}Ge	7500.	800.
^{77}Ge			^{77}Ge	4300.	500.
^{78}Ge	370.	7.	^{78}Ge	1700.	300.
^{79}Ge	371.	7.	^{79}Ge	3300.	900.
^{80}Ge	323.	6.	^{80}Ge	4600.	1000.
^{81}Ge	291.	3.	^{81}Ge	4600.	600.
^{82}Ge	207.	2.	^{82}Ge	4240.	600.
^{83}Ge	76.	1.	^{83}Ge	1700.	150.
^{84}Ge	29.	0.3	^{84}Ge	500.	40.
^{85}Ge	4.7	0.1	^{85}Ge	130.	30.
^{86}Ge	0.82	0.02	^{86}Ge	70.	30.
^{87}Ge	0.067	0.003	^{87}Ge		
^{88}Ge	0.0067	0.0009	^{88}Ge		
^{89}Ge	0.0006	0.0003	^{89}Ge		

Table 5:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{75}As			^{75}As	6700.	4000.
^{76}As			^{76}As	10900.	1000.
^{77}As			^{77}As	12200.	1100.
^{78}As			^{78}As	8700.	800.
^{79}As			^{79}As	5800.	600.
^{80}As			^{80}As	4200.	600.
^{81}As			^{81}As	7400.	2400.
^{82}As	535.	11.	^{82}As	7200.	1400.
^{83}As	503.	10.	^{83}As	10600.	1300.
^{84}As	394.	4.	^{84}As	6600.	600.
^{85}As	247.	2.	^{85}As	5300.	700.
^{86}As	73.	0.7	^{86}As	1700.	100.
^{87}As	19.	0.4	^{87}As	520.	50.
^{88}As	2.9	0.09	^{88}As	73.	20.
^{89}As	0.34	0.01	^{89}As	7.	2.
^{90}As	0.021	0.002	^{90}As		
^{91}As	0.0032	0.0008	^{91}As		
^{92}As	0.0006	0.0003	^{92}As		
^{77}Se			^{77}Se	6550.	3000.
^{78}Se			^{78}Se	14700.	1300.
^{79}Se			^{79}Se	14900.	1200.
^{80}Se			^{80}Se	15200.	1300.
^{81}Se			^{81}Se	9600.	600.
^{82}Se			^{82}Se	6760.	1000.
^{83}Se	1360.	27.	^{83}Se	9120.	3100.
^{84}Se	1150.	12.	^{84}Se	18610.	3000.
^{85}Se	870.	261.	^{85}Se	20620.	2700.
^{86}Se	910.	9.	^{86}Se	22200.	1300.
^{87}Se	536.	5.	^{87}Se	14230.	1700.
^{88}Se	279.	3.	^{88}Se	7130.	1000.
^{89}Se	61.	0.6	^{89}Se	1630.	80.
^{90}Se	14.	0.3	^{90}Se	400.	50.
^{91}Se	1.1	0.02	^{91}Se	31.	15.
^{92}Se	0.12	0.005	^{92}Se		
^{93}Se	0.008	0.001	^{93}Se		
^{94}Se	0.002	0.0005	^{94}Se		

Table 6:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{79}Br			^{79}Br	7900.	3000.
^{80}Br			^{80}Br		
^{81}Br			^{81}Br	17350.	1300.
^{82}Br			^{82}Br	17400.	1400.
^{83}Br			^{83}Br	14600.	1200.
^{84}Br			^{84}Br	11200.	1000.
^{85}Br			^{85}Br	10900.	3000.
^{86}Br	1360.	14.	^{86}Br	21250.	6200.
^{87}Br	1280.	13.	^{87}Br	30560.	3000.
^{88}Br	960.	480.	^{88}Br	37440.	4800.
^{89}Br	1020.	10.	^{89}Br	25900.	1300.
^{90}Br	447.	4.	^{90}Br	14900.	2500.
^{91}Br	238.	2.	^{91}Br	5940.	500.
^{92}Br	34.	0.3	^{92}Br	890.	50.
^{93}Br	8.2	0.16	^{93}Br	230.	40.
^{94}Br	0.67	0.02	^{94}Br		
^{95}Br	0.075	0.003	^{95}Br		
^{96}Br	0.0059	0.0008	^{96}Br		
^{97}Br	0.0007	0.0003	^{97}Br		
^{79}Kr			^{79}Kr	3750.	2000.
^{80}Kr			^{80}Kr	8370.	4800.
^{81}Kr			^{81}Kr	10900.	4500.
^{82}Kr			^{82}Kr		
^{83}Kr			^{83}Kr	16000.	1400.
^{84}Kr			^{84}Kr	19100.	1600.
^{85}Kr			^{85}Kr	17100.	1400.
^{86}Kr			^{86}Kr	13300.	1800.
^{87}Kr			^{87}Kr	10000.	2600.
^{88}Kr			^{88}Kr	26400.	8400.
^{89}Kr	2170.	22.	^{89}Kr	49600.	6000.
^{90}Kr	1600.	16.	^{90}Kr	59400.	5000.
^{91}Kr	1580.	16.	^{91}Kr	58600.	3800.
^{92}Kr	1290.	13.	^{92}Kr	32600.	1400.
^{93}Kr	467.	5.	^{93}Kr	15300.	1700.
^{94}Kr	168.	1.7	^{94}Kr	4840.	240.
^{95}Kr	29.	0.3	^{95}Kr	800.	50.
^{96}Kr	6.	0.1	^{96}Kr	180.	30.
^{97}Kr	0.5	0.015	^{97}Kr		
^{98}Kr	0.054	0.003	^{98}Kr		
^{99}Kr	0.0026	0.0005	^{99}Kr		
^{100}Kr	0.0005	0.0003	^{100}Kr		

Table 7:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{82}Rb			^{82}Rb	2800.	1100.
^{83}Rb			^{83}Rb	10300.	5000.
^{84}Rb			^{84}Rb	9500.	4000.
^{85}Rb			^{85}Rb	18100.	2400.
^{86}Rb			^{86}Rb	18700.	1500.
^{87}Rb			^{87}Rb	21400.	1700.
^{88}Rb			^{88}Rb	16400.	1400.
^{89}Rb			^{89}Rb	13700.	3600.
^{90}Rb			^{90}Rb	18900.	5400.
^{91}Rb	3000.	30.	^{91}Rb	49500.	10900.
^{92}Rb	2040.	204.	^{92}Rb	57800.	4200.
^{93}Rb	1300.	650.	^{93}Rb	65440.	7200.
^{94}Rb	1450.	15.	^{94}Rb	42800.	1750.
^{95}Rb	1040.	10.	^{95}Rb	29340.	3800.
^{96}Rb	323.	3.	^{96}Rb	10440.	870.
^{97}Rb	122.	1.	^{97}Rb	3090.	110.
^{98}Rb	18.	0.4	^{98}Rb	490.	50.
^{99}Rb	3.2	0.1	^{99}Rb	95.	20.
^{100}Rb	0.23	0.01	^{100}Rb		
^{101}Rb	0.025	0.002	^{101}Rb		
^{102}Rb	0.0009	0.0003	^{102}Rb		

Table 8:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{84}Sr			^{84}Sr	320.	170.
^{85}Sr			^{85}Sr	1570.	900.
^{86}Sr			^{86}Sr	5250.	2410.
^{87}Sr			^{87}Sr	8000.	3000.
^{88}Sr			^{88}Sr	18000.	1400.
^{89}Sr			^{89}Sr	20000.	2500.
^{90}Sr			^{90}Sr	19700.	2500.
^{91}Sr			^{91}Sr	13400.	5000.
^{92}Sr			^{92}Sr	20560.	7200.
^{93}Sr			^{93}Sr	37300.	12000.
^{94}Sr	2540.	25.	^{94}Sr	58700.	8800.
^{95}Sr	1950.	20.	^{95}Sr	72000.	4600.
^{96}Sr	1180.	590.	^{96}Sr	78600.	6700.
^{97}Sr	1460.	15.	^{97}Sr	42700.	1500.
^{98}Sr	856.	9.	^{98}Sr	30700.	3700.
^{99}Sr	223.	2.	^{99}Sr	7100.	550.
^{100}Sr	53.	0.5	^{100}Sr	1790.	70.
^{101}Sr	7.9	0.2	^{101}Sr	260.	30.
^{102}Sr	0.94	0.03	^{102}Sr		
^{103}Sr	0.05	0.003	^{103}Sr		
^{104}Sr	0.0066	0.0009	^{104}Sr		
^{105}Sr	0.0008	0.0005	^{105}Sr		

Table 9:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{86}Y			^{86}Y	2000.	1100.
^{87}Y			^{87}Y	9200.	4230.
^{88}Y			^{88}Y	11400.	4700.
^{89}Y			^{89}Y		
^{90}Y			^{90}Y	18340.	1500.
^{91}Y			^{91}Y	20100.	1600.
^{92}Y			^{92}Y	22600.	2900.
^{93}Y			^{93}Y	17700.	1500.
^{94}Y			^{94}Y	16500.	4000.
^{95}Y			^{95}Y	25150.	5800.
^{96}Y			^{96}Y	43400.	7300.
^{97}Y			^{97}Y	66000.	5000.
^{98}Y			^{98}Y	62300.	5000.
^{99}Y	1580.	16.	^{99}Y	68100.	3400.
^{100}Y	1250.	13.	^{100}Y	28000.	1100.
^{101}Y	514.	5.	^{101}Y	14800.	1600.
^{102}Y	124.	1.	^{102}Y	3110.	180.
^{103}Y	24.	0.2	^{103}Y	590.	40.
^{104}Y	2.8	0.1	^{104}Y	70.	10.
^{105}Y	0.31	0.02	^{105}Y	10.	3.
^{106}Y	0.016	0.002	^{106}Y		
^{107}Y	0.0028	0.0007	^{107}Y		

Table 10:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{88}Zr			^{88}Zr	2000.	1800.
^{89}Zr			^{89}Zr	8800.	5000.
^{90}Zr			^{90}Zr	12000.	5000.
^{91}Zr			^{91}Zr	10000.	3000.
^{92}Zr			^{92}Zr	16400.	2100.
^{93}Zr			^{93}Zr	18400.	1400.
^{94}Zr			^{94}Zr	24100.	3100.
^{95}Zr			^{95}Zr	21500.	2700.
^{96}Zr			^{96}Zr	19300.	2500.
^{97}Zr			^{97}Zr	21400.	7500.
^{98}Zr			^{98}Zr	37100.	12200.
^{99}Zr	2560.	26.	^{99}Zr	70000.	10000.
^{100}Zr	2410.	24.	^{100}Zr	86300.	4500.
^{101}Zr	1240.	620.	^{101}Zr	73100.	5000.
^{102}Zr	1390.	14.	^{102}Zr	52600.	1700.
^{103}Zr	674.	7.	^{103}Zr	22000.	1900.
^{104}Zr	280.	3.	^{104}Zr	8700.	700.
^{105}Zr	50.	0.5	^{105}Zr	1150.	70.
^{106}Zr	9.1	0.2	^{106}Zr	210.	20.
^{107}Zr	0.88	0.04	^{107}Zr	25.	10.
^{108}Zr	0.10	0.006	^{108}Zr		
^{109}Zr	0.0054	0.0008	^{109}Zr		
^{110}Zr	0.0004	0.0002	^{110}Zr		

Table 11:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{90}Nb			^{90}Nb	3360.	1800.
^{91}Nb			^{91}Nb	6870.	4200.
^{92}Nb			^{92}Nb	11250.	5100.
^{93}Nb			^{93}Nb	10120.	4200.
^{94}Nb			^{94}Nb	13900.	4200.
^{95}Nb			^{95}Nb	17200.	1300.
^{96}Nb			^{96}Nb	20400.	2600.
^{97}Nb			^{97}Nb	24000.	3000.
^{98}Nb			^{98}Nb	18300.	1500.
^{99}Nb			^{99}Nb	17300.	2200.
^{100}Nb			^{100}Nb	22000.	7500.
^{101}Nb			^{101}Nb	39800.	12700.
^{102}Nb			^{102}Nb	55300.	6600.
^{103}Nb			^{103}Nb	56900.	3900.
^{104}Nb			^{104}Nb	38900.	4300.
^{105}Nb	1800.	180.	^{105}Nb	19200.	900.
^{106}Nb	383.	4.	^{106}Nb	6340.	950.
^{107}Nb	134.	1.	^{107}Nb	1850.	220.
^{108}Nb	25.	1.	^{108}Nb	240.	29.
^{109}Nb	4.5	0.1	^{109}Nb	41.	13.
^{110}Nb	0.48	0.03	^{110}Nb	6.	3.
^{111}Nb	0.05	0.005	^{111}Nb		
^{112}Nb	0.0025	0.0006	^{112}Nb		
^{113}Nb	0.0007	0.0003	^{113}Nb		

Table 12:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{92}Mo			^{92}Mo	2070.	1300.
^{93}Mo			^{93}Mo	4770.	2300.
^{94}Mo			^{94}Mo	8450.	3600.
^{95}Mo			^{95}Mo	12010.	3700.
^{96}Mo			^{96}Mo	15000.	4000.
^{97}Mo			^{97}Mo	16500.	2100.
^{98}Mo			^{98}Mo	19400.	2500.
^{99}Mo			^{99}Mo	26500.	6900.
^{100}Mo			^{100}Mo	23300.	6100.
^{101}Mo			^{101}Mo	19400.	2500.
^{102}Mo			^{102}Mo	15500.	5000.
^{103}Mo			^{103}Mo	30000.	7000.
^{104}Mo			^{104}Mo	44300.	10000.
^{105}Mo			^{105}Mo	41500.	4100.
^{106}Mo			^{106}Mo	30500.	3000.
^{107}Mo			^{107}Mo	16200.	1500.
^{108}Mo			^{108}Mo	7000.	500.
^{109}Mo			^{109}Mo	1970.	280.
^{110}Mo			^{110}Mo	550.	70.
^{111}Mo			^{111}Mo	71.	14.
^{112}Mo			^{112}Mo	12.	5.
^{113}Mo			^{113}Mo		
^{114}Mo	0.024	0.009	^{114}Mo		

Table 13:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{94}Tc			^{94}Tc	1707.	800.
^{95}Tc			^{95}Tc	3720.	1500.
^{96}Tc			^{96}Tc	5900.	2700.
^{97}Tc			^{97}Tc	8020.	3320.
^{98}Tc			^{98}Tc		
^{99}Tc			^{99}Tc	14190.	2000.
^{100}Tc			^{100}Tc	15800.	1200.
^{101}Tc			^{101}Tc	20200.	2500.
^{102}Tc			^{102}Tc	23500.	3000.
^{103}Tc			^{103}Tc	23700.	1800.
^{104}Tc			^{104}Tc	18700.	1400.
^{105}Tc			^{105}Tc	19900.	6000.
^{106}Tc			^{106}Tc	18200.	5500.
^{107}Tc			^{107}Tc	24200.	6500.
^{108}Tc			^{108}Tc	19800.	2400.
^{109}Tc			^{109}Tc	14200.	1700.
^{110}Tc			^{110}Tc	7800.	900.
^{111}Tc			^{111}Tc	2910.	700.
^{112}Tc			^{112}Tc	850.	200.
^{113}Tc			^{113}Tc	220.	40.
^{114}Tc			^{114}Tc	25.	7.
^{115}Tc			^{115}Tc	9.	4.
^{116}Tc	0.081	0.016	^{116}Tc		
^{117}Tc	0.0084	0.0050	^{117}Tc		

Table 14:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{98}Ru			^{98}Ru	5550.	2550.
^{99}Ru			^{99}Ru	7000.	3200.
^{100}Ru			^{100}Ru	7530.	3140.
^{101}Ru			^{101}Ru	12800.	2600.
^{102}Ru			^{102}Ru	14900.	1100.
^{103}Ru			^{103}Ru	18100.	1400.
^{104}Ru			^{104}Ru	23400.	6100.
^{105}Ru			^{105}Ru	21100.	2700.
^{106}Ru			^{106}Ru	19300.	2400.
^{107}Ru			^{107}Ru	16900.	4500.
^{108}Ru			^{108}Ru	14500.	6000.
^{109}Ru			^{109}Ru	19300.	6400.
^{110}Ru			^{110}Ru	21500.	4300.
^{111}Ru			^{111}Ru	14500.	1600.
^{112}Ru			^{112}Ru	10100.	1400.
^{113}Ru			^{113}Ru	4370.	500.
^{114}Ru			^{114}Ru	1570.	200.
^{115}Ru			^{115}Ru	480.	100.
^{116}Ru			^{116}Ru	110.	20.
^{117}Ru			^{117}Ru	20.	8.
^{118}Ru			^{118}Ru		
^{119}Ru	0.014	0.006	^{119}Ru		

Table 15:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{99}Rh			^{99}Rh	1220.	670.
^{100}Rh			^{100}Rh	5360.	2460.
^{101}Rh			^{101}Rh	6000.	2800.
^{102}Rh			^{102}Rh	6500.	2000.
^{103}Rh			^{103}Rh		
^{104}Rh			^{104}Rh	12500.	1000.
^{105}Rh			^{105}Rh	14600.	1100.
^{106}Rh			^{106}Rh	17700.	2200.
^{107}Rh			^{107}Rh	20500.	5300.
^{108}Rh			^{108}Rh	18200.	1400.
^{109}Rh			^{109}Rh	16400.	1300.
^{110}Rh			^{110}Rh	14300.	3800.
^{111}Rh			^{111}Rh	16500.	4610.
^{112}Rh			^{112}Rh	17300.	4700.
^{113}Rh			^{113}Rh	18030.	2300.
^{114}Rh			^{114}Rh	10400.	1100.
^{115}Rh			^{115}Rh	7000.	1050.
^{116}Rh			^{116}Rh	2740.	300.
^{117}Rh			^{117}Rh	1000.	200.
^{118}Rh			^{118}Rh	230.	70.
^{119}Rh			^{119}Rh	45.	20.
^{120}Rh			^{120}Rh	4.	2.
^{121}Rh			^{121}Rh		
^{122}Rh	0.013	0.006	^{122}Rh		

Table 16:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{101}Pd			^{101}Pd	780.	450.
^{102}Pd			^{102}Pd	2960.	1840.
^{103}Pd			^{103}Pd	5320.	2210.
^{104}Pd			^{104}Pd	4700.	2000.
^{105}Pd			^{105}Pd	9100.	1400.
^{106}Pd			^{106}Pd	12600.	1600.
^{107}Pd			^{107}Pd	13700.	1100.
^{108}Pd			^{108}Pd	16700.	1300.
^{109}Pd			^{109}Pd	21900.	5700.
^{110}Pd			^{110}Pd	19700.	2500.
^{111}Pd			^{111}Pd	16200.	1200.
^{112}Pd			^{112}Pd	14600.	1100.
^{113}Pd			^{113}Pd	13500.	3800.
^{114}Pd			^{114}Pd	15300.	3100.
^{115}Pd			^{115}Pd	18100.	3000.
^{116}Pd			^{116}Pd	14600.	1700.
^{117}Pd			^{117}Pd	9250.	1200.
^{118}Pd			^{118}Pd	5020.	650.
^{119}Pd			^{119}Pd	1900.	270.
^{120}Pd			^{120}Pd	640.	140.
^{121}Pd			^{121}Pd	160.	40.
^{122}Pd			^{122}Pd	40.	10.
^{123}Pd			^{123}Pd	10.	4.

Table 17:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{103}Ag			^{103}Ag	300.	130.
^{104}Ag			^{104}Ag	1000.	640.
^{105}Ag			^{105}Ag	3850.	1600.
^{106}Ag			^{106}Ag	3820.	1600.
^{107}Ag			^{107}Ag		
^{108}Ag			^{108}Ag	9000.	1000.
^{109}Ag			^{109}Ag	11700.	1000.
^{110}Ag			^{110}Ag	14600.	1100.
^{111}Ag			^{111}Ag	17900.	2300.
^{112}Ag			^{112}Ag	20800.	5400.
^{113}Ag			^{113}Ag	18000.	1400.
^{114}Ag			^{114}Ag	15600.	1200.
^{115}Ag			^{115}Ag	13900.	1800.
^{116}Ag			^{116}Ag	14200.	3400.
^{117}Ag			^{117}Ag	15440.	3500.
^{118}Ag			^{118}Ag	15700.	2300.
^{119}Ag			^{119}Ag	11300.	1500.
^{120}Ag			^{120}Ag	6500.	1000.
^{121}Ag			^{121}Ag	3700.	500.
^{122}Ag			^{122}Ag	1250.	200.
^{123}Ag			^{123}Ag	570.	160.
^{124}Ag			^{124}Ag	150.	40.
^{125}Ag			^{125}Ag	47.	11.
^{126}Ag			^{126}Ag	8.	3.

Table 18:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{107}Cd			^{107}Cd	460.	340.
^{108}Cd			^{108}Cd	1510.	690.
^{109}Cd			^{109}Cd	1740.	750.
^{110}Cd			^{110}Cd		
^{111}Cd			^{111}Cd	8800.	1100.
^{112}Cd			^{112}Cd	11600.	1500.
^{113}Cd			^{113}Cd	14700.	1100.
^{114}Cd			^{114}Cd	18700.	2400.
^{115}Cd			^{115}Cd	18200.	2400.
^{116}Cd			^{116}Cd	14900.	1200.
^{117}Cd			^{117}Cd	14200.	1800.
^{118}Cd			^{118}Cd	13500.	3500.
^{119}Cd			^{119}Cd	11700.	3100.
^{120}Cd			^{120}Cd	14400.	3300.
^{121}Cd			^{121}Cd	11100.	2200.
^{122}Cd			^{122}Cd	9500.	1000.
^{123}Cd			^{123}Cd	6000.	800.
^{124}Cd			^{124}Cd	3500.	350.
^{125}Cd			^{125}Cd	2030.	260.
^{126}Cd			^{126}Cd	1240.	220.
^{127}Cd			^{127}Cd		
^{128}Cd			^{128}Cd	160.	20.
^{129}Cd			^{129}Cd	25.	6.

Table 19:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{108}In			^{108}In	1250.	900.
^{109}In			^{109}In	2360.	1080.
^{110}In			^{110}In	3050.	1270.
^{111}In			^{111}In		
^{112}In			^{112}In		
^{113}In			^{113}In		
^{114}In			^{114}In	10200.	800.
^{115}In			^{115}In	12000.	1000.
^{116}In			^{116}In	14600.	1900.
^{117}In			^{117}In	16500.	2100.
^{118}In			^{118}In	16100.	1200.
^{119}In			^{119}In	13500.	1100.
^{120}In			^{120}In	13100.	1700.
^{121}In			^{121}In	13400.	2600.
^{122}In			^{122}In	14600.	3100.
^{123}In			^{123}In	14900.	3000.
^{124}In			^{124}In	10500.	1200.
^{125}In			^{125}In	8900.	1000.
^{126}In			^{126}In	6900.	800.
^{127}In			^{127}In	5030.	450.
^{128}In			^{128}In	4200.	600.
^{129}In			^{129}In	3100.	500.
^{130}In			^{130}In	1150.	110.
^{131}In			^{131}In	290.	20.
^{132}In			^{132}In	32.	7.

Table 20:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{111}Sn			^{111}Sn	1900.	900.
^{112}Sn			^{112}Sn	2300.	900.
^{113}Sn			^{113}Sn		
^{114}Sn			^{114}Sn		
^{115}Sn			^{115}Sn		
^{116}Sn			^{116}Sn	5600.	700.
^{117}Sn			^{117}Sn	8100.	1100.
^{118}Sn			^{118}Sn	10600.	900.
^{119}Sn			^{119}Sn	11000.	2900.
^{120}Sn			^{120}Sn	13800.	1700.
^{121}Sn			^{121}Sn	12300.	900.
^{122}Sn			^{122}Sn	10500.	2400.
^{123}Sn			^{123}Sn	9300.	2300.
^{124}Sn			^{124}Sn	11200.	3200.
^{125}Sn			^{125}Sn	11100.	3900.
^{126}Sn			^{126}Sn	13000.	3100.
^{127}Sn			^{127}Sn	13900.	1400.
^{128}Sn			^{128}Sn	16400.	1500.
^{129}Sn			^{129}Sn	20600.	1200.
^{130}Sn			^{130}Sn	25700.	900.
^{131}Sn			^{131}Sn	23200.	1900.
^{132}Sn			^{132}Sn	15400.	1400.
^{133}Sn			^{133}Sn	2590.	110.
^{134}Sn			^{134}Sn	476.	26.
^{135}Sn			^{135}Sn	67.	11.
^{136}Sn			^{136}Sn	13.	5.

Table 21:

$^{238}U + Be$ at 750 AMeV			$^{238}U + Pb$ at 750 AMeV		
fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)	fragment	σ (μbarn)	$\Delta\sigma$ (μbarn)
^{114}Sb			^{114}Sb	1700.	800.
^{115}Sb			^{115}Sb		
^{116}Sb			^{116}Sb		
^{117}Sb			^{117}Sb		
^{118}Sb			^{118}Sb		
^{119}Sb			^{119}Sb		
^{120}Sb			^{120}Sb		
^{121}Sb			^{121}Sb	9700.	2500.
^{122}Sb			^{122}Sb	11600.	1500.
^{123}Sb			^{123}Sb	12300.	1000.
^{124}Sb			^{124}Sb	11200.	900.
^{125}Sb			^{125}Sb	9300.	1200.
^{126}Sb			^{126}Sb	8300.	2700.
^{127}Sb			^{127}Sb	13000.	3680.
^{128}Sb			^{128}Sb	14100.	4100.
^{129}Sb			^{129}Sb	16400.	2500.
^{130}Sb			^{130}Sb	24100.	1800.
^{131}Sb			^{131}Sb	41200.	3000.
^{132}Sb			^{132}Sb	47500.	1900.
^{133}Sb			^{133}Sb	45000.	1400.
^{134}Sb			^{134}Sb	16800.	1600.
^{135}Sb			^{135}Sb	5900.	470.
^{136}Sb			^{136}Sb	1100.	60.
^{137}Sb			^{137}Sb	180.	20.
^{138}Sb			^{138}Sb	23.	6.
^{139}Sb			^{139}Sb	5.	2.