Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
Ac-223	-	1.55E-08	2.41E-12	1.04E-08	1.47E-08	4.01E-09	9.86E-01	1.66E+05	3.26E+07	2.10E+11	4.86E+07	3.44E+07	1.26E+08	8.52E-08
Ac-223+D	-	2.34E-07	3.32E-11	1.47E-07	2.18E-07	5.80E-08	9.07E-01	1.66E+05	2.35E+06	1.65E+10	3.74E+06	2.52E+06	9.47E+06	6.13E-09
Ac-224	S	6.06E-07	1.03E-10	4.34E-07	5.91E-07	1.65E-07	1.00E+00	2.09E+03	1.04E+04	6.12E+07	1.45E+04	1.07E+04	3.82E+04	2.16E-09
Ac-225	S	4.50E-08	8.14E-12	3.34E-08	4.42E-08	1.35E-08	9.78E-01	2.53E+01	1.73E+03	9.56E+06	2.33E+03	1.76E+03	5.76E+03	2.98E-08
Ac-225+D	S	9.36E-07	1.26E-10	5.65E-07	8.50E-07	2.04E-07	9.63E-01	2.53E+01	8.44E+01	6.27E+05	1.40E+02	9.30E+01	3.87E+02	1.46E-09
Ac-226	S	4.46E-07	6.97E-11	3.05E-07	4.32E-07	1.12E-07	1.00E+00	2.09E+02	1.41E+03	9.04E+06	2.07E+03	1.46E+03	5.62E+03	2.96E-09
Ac-227	S	3.48E-10	6.46E-14	2.62E-10	3.43E-10	1.21E-10	1.00E+00	3.18E-02	4.47E+02	2.41E+06	5.94E+02	4.54E+02	1.29E+03	6.19E-06
Ac-228	S	4.53E-06	5.48E-10	2.49E-06	3.92E-06	8.56E-07	9.69E-01	9.90E+02	6.79E+02	5.61E+06	1.23E+03	7.84E+02	3.59E+03	3.03E-10
Ag-102	M	1.60E-05	1.89E-09	8.64E-06	1.37E-05	2.94E-06	8.33E-01	2.82E+04	6.37E+03	5.40E+07	1.18E+04	7.44E+03	3.47E+04	4.47E-11
Ag-103	M	3.33E-06	4.29E-10	1.94E-06	2.98E-06	6.75E-07	9.38E-01	5.54E+03	5.34E+03	4.15E+07	9.17E+03	5.97E+03	2.63E+04	1.93E-10
Ag-104	M	1.25E-05	1.52E-09	6.93E-06	1.09E-05	2.37E-06	8.67E-01	5.26E+03	1.46E+03	1.20E+07	2.64E+03	1.68E+03	7.71E+03	5.60E-11
Ag-104m	M	5.50E-06	6.61E-10	3.01E-06	4.74E-06	1.03E-06	8.56E-01	1.09E+04	6.95E+03	5.78E+07	1.27E+04	8.06E+03	3.71E+04	1.29E-10
Ag-105	M	2.15E-06	2.90E-10	1.30E-06	1.97E-06	4.58E-07	9.05E-01	6.17E+00	9.54E+00	7.07E+04	1.58E+01	1.04E+01	4.48E+01	3.15E-10
Ag-106	M	3.08E-06	4.06E-10	1.83E-06	2.80E-06	6.46E-07	9.16E-01	1.52E+04	1.62E+04	1.23E+08	2.73E+04	1.78E+04	7.73E+04	2.19E-10
Ag-106m	M	1.31E-05	1.60E-09	7.28E-06	1.14E-05	2.49E-06	8.81E-01	3.01E+01	7.84E+00	6.42E+04	1.41E+01	9.01E+00	4.13E+01	5.36E-11
Ag-108	-	8.56E-08	1.17E-11	5.10E-08	7.74E-08	2.60E-08	8.78E-01	1.54E+05	6.15E+06	4.50E+10	1.03E+07	6.80E+06	2.03E+07	8.39E-09
Ag-108m	M	7.18E-06	9.27E-10	4.18E-06	6.45E-06	1.45E-06	8.80E-01	5.46E-03	1.72E-02	1.33E+02	2.96E-02	1.92E-02	8.52E-02	6.61E-10
Ag-109m	-	7.66E-09	1.89E-12	6.44E-09	7.69E-09	5.64E-09	9.95E-01	5.52E+05	2.18E+08	8.83E+11	2.59E+08	2.17E+08	2.96E+08	8.35E-08
Ag-110	-	1.69E-07	2.35E-11	1.00E-07	1.52E-07	4.93E-08	8.70E-01	8.88E+05	1.82E+07	1.31E+11	3.07E+07	2.02E+07	6.23E+07	4.37E-09
Ag-110m	M	1.30E-05	1.57E-09	7.14E-06	1.13E-05	2.44E-06	9.18E-01	1.01E+00	2.55E-01	2.11E+03	4.65E-01	2.94E-01	1.36E+00	5.38E-11
Ag-111	M	1.09E-07	1.54E-11	6.91E-08	1.03E-07	2.72E-08	9.02E-01	3.40E+01	1.04E+03	7.35E+06	1.64E+03	1.10E+03	4.16E+03	6.59E-09
Ag-112	M	3.24E-06	3.78E-10	1.73E-06	2.74E-06	5.98E-07	8.71E-01	1.95E+03	2.07E+03	1.78E+07	3.89E+03	2.45E+03	1.12E+04	2.32E-10
Ag-115	M	3.45E-06	3.96E-10	1.82E-06	2.90E-06	6.21E-07	8.78E-01	1.82E+04	1.81E+04	1.58E+08	3.43E+04	2.15E+04	1.01E+05	2.22E-10
Al-26	M	1.33E-05	1.48E-09	6.88E-06	1.11E-05	2.30E-06	8.45E-01	9.68E-07	8.92E-03	8.02E+01	1.73E-02	1.07E-02	5.16E-02	4.65E-07
Al-28	-	9.32E-06	9.81E-10	4.58E-06	7.53E-06	1.52E-06	8.14E-01	1.63E+05	6.45E+04	6.13E+08	1.31E+05	7.98E+04	3.95E+05	2.15E-11
Am-237	M	1.35E-06	1.99E-10	8.74E-07	1.27E-06	3.15E-07	9.45E-01	4.99E+03	1.18E+04	7.98E+07	1.82E+04	1.25E+04	5.04E+04	1.08E-09
Am-238	M	4.02E-06	4.98E-10	2.24E-06	3.49E-06	7.77E-07	9.50E-01	3.72E+03	2.93E+03	2.36E+07	5.26E+03	3.37E+03	1.52E+04	3.64E-10
Am-239	M	6.91E-07	1.18E-10	4.98E-07	6.76E-07	1.92E-07	9.99E-01	5.10E+02	2.22E+03	1.30E+07	3.09E+03	2.27E+03	8.00E+03	2.02E-09
Am-240	M	4.70E-06	5.76E-10	2.60E-06	4.08E-06	8.99E-07	9.66E-01	1.20E+02	7.92E+01	6.46E+05	1.43E+02	9.12E+01	4.14E+02	3.09E-10
Am-241	M	2.76E-08	8.63E-12	2.58E-08	2.76E-08	1.96E-08	9.65E-01	1.60E-03	3.86E+00	1.23E+04	4.13E+00	3.86E+00	5.43E+00	1.12E-06
Am-242	M	3.48E-08	6.81E-12	2.72E-08	3.47E-08	1.25E-08	9.98E-01	3.79E+02	3.28E+04	1.68E+08	4.20E+04	3.29E+04	9.14E+04	4.07E-08
Am-242m	M	1.05E-09	2.74E-13	8.57E-10	1.04E-09	1.50E-09	9.99E-01	4.56E-03	1.02E+02	3.92E+05	1.25E+02	1.03E+02	7.16E+01	9.77E-06
Am-242m+D	M	4.82E-08	8.57E-12	3.48E-08	4.64E-08	1.66E-08	9.98E-01	4.56E-03	2.23E+00	1.25E+04	3.09E+00	2.32E+00	6.48E+00	2.13E-07
Am-243	M	9.47E-08	2.37E-11	8.26E-08	9.47E-08	4.33E-08	9.54E-01	9.39E-05	1.11E+00	4.44E+03	1.27E+00	1.11E+00	2.43E+00	5.58E-06
Am-243+D	M	6.36E-07	1.12E-10	4.61E-07	6.18E-07	1.86E-07	9.58E-01	9.39E-05	1.65E-01	9.36E+02	2.27E-01	1.70E-01	5.64E-01	8.28E-07
Am-244	M	3.59E-06	4.51E-10	2.03E-06	3.17E-06	7.09E-07	8.77E-01	6.01E+02	5.74E+02	4.57E+06	1.02E+03	6.51E+02	2.91E+03	4.52E-10
Am-244m	M	5.09E-09	1.12E-12	3.71E-09	4.91E-09	8.00E-09	9.99E-01	1.40E+04	8.29E+06	3.77E+10	1.14E+07	8.59E+06	5.27E+06	2.80E-07
Am-245	M	1.04E-07	1.68E-11	7.25E-08	1.01E-07	2.84E-08	9.26E-01	2.96E+03	9.25E+04	5.73E+08	1.33E+05	9.53E+04	3.39E+05	1.49E-08
Am-246	M	2.93E-06	3.85E-10	1.73E-06	2.64E-06	6.11E-07	9.33E-01	9.34E+03	1.03E+04	7.82E+07	1.74E+04	1.14E+04	4.93E+04	5.25E-10
Am-246m	M	4.84E-06	5.77E-10	2.63E-06	4.16E-06	9.02E-07	9.79E-01	1.46E+04	9.25E+03	7.76E+07	1.70E+04	1.08E+04	4.96E+04	3.03E-10
Ar-37	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.22E+00	-	-	-	-	-	-
Ar-39	-	5.95E-10	1.27E-13	4.61E-10	5.85E-10	5.13E-10	9.27E-01	2.58E-03	1.89E+02	8.85E+05	2.44E+02	1.92E+02	2.19E+02	5.55E-06
Ar-41	-	6.39E-06	7.23E-10	3.33E-06	5.36E-06	1.12E-06	8.33E-01	3.32E+03	1.88E+03	1.66E+07	3.60E+03	2.24E+03	1.07E+04	4.50E-11
As-69	M	4.43E-06	5.88E-10	2.64E-06	4.03E-06	9.34E-07	8.83E-01	2.40E+04	1.84E+04	1.39E+08	3.09E+04	2.03E+04	8.74E+04	1.03E-10
As-69+D	M	8.44E-06	1.09E-09	4.89E-06	7.56E-06	1.71E-06	9.25E-01	2.40E+04	9.24E+03	7.15E+07	1.59E+04	1.03E+04	4.56E+04	5.16E-11
As-70	M	1.96E-05	2.31E-09	1.06E-05	1.68E-05	3.60E-06	8.70E-01	6.92E+03	1.22E+03	1.04E+07	2.26E+03	1.43E+03	6.65E+03	2.40E-11
As-71	M	2.37E-06	3.22E-10	1.45E-06	2.17E-06	5.06E-07	8.84E-01	9.37E+01	1.35E+02	9.90E+05	2.20E+02	1.47E+02	6.30E+02	1.98E-10
As-72	M	8.21E-06	1.03E-09	4.66E-06	7.25E-06	1.61E-06	8.63E-01	2.33E+02	9.92E+01	7.90E+05	1.75E+02	1.12E+02	5.06E+02	5.93E-11
As-73	M	5.78E-09	2.01E-12	5.55E-09	5.78E-09	4.47E-09	9.94E-01	3.15E+00	1.65E+03	4.74E+06	1.72E+03	1.65E+03	2.13E+03	7.42E-08
As-74	M	3.35E-06	4.36E-10	1.96E-06	3.03E-06	6.84E-07	8.77E-01	1.42E+01	1.46E+01	1.12E+05	2.49E+01	1.61E+01	7.14E+01	1.47E-10
As-76	M	2.01E-06	2.50E-10	1.13E-06	1.76E-06	4.01E-07	8.75E-01	2.31E+02	3.95E+02	3.17E+06	7.02E+02	4.51E+02	1.98E+03	2.52E-10
As-77	M	3.59E-08	5.12E-12	2.28E-08	3.36E-08	8.68E-09	9.00E-01	1.56E+02	1.46E+04	1.02E+08	2.29E+04	1.56E+04	6.03E+04	1.39E-08
As-78	M	6.11E-06	7.14E-10	3.26E-06	5.20E-06	1.12E-06	8.58E-01	4.02E+03	2.30E+03	1.97E+07	4.32E+03	2.71E+03	1.26E+04	8.69E-11
At-207	M	6.11E-06	7.41E-10	3.35E-06	5.26E-06	1.15E-06	9.34E-01	3.37E+03	1.78E+03	1.47E+07	3.24E+03	2.07E+03	9.45E+03	2.12E-10
At-211	M	7.94E-08	1.76E-11	6.52E-08	7.86E-08	3.04E-08	1.00E+00	8.42E+02	3.19E+04	1.44E+08	3.88E+04	3.22E+04	8.33E+04	1.55E-08
At-211+D	M	1.00E-07	2.02E-11	7.70E-08	9.71E-08	3.44E-08	9.85E-01	8.42E+02	2.57E+04	1.27E+08	3.34E+04	2.65E+04	7.47E+04	1.25E-08
At-215	-	8.09E-10	1.10E-13	4.96E-10	7.49E-10	1.73E-10	8.94E-01	2.19E+11	9.09E+14	6.69E+18	1.48E+15	9.82E+14	4.25E+15	1.74E-06
At-216	-	3.08E-09	6.88E-13	2.56E-09	3.08E-09	1.18E-09	9.54E-01	7.28E+10	7.46E+13	3.34E+17	8.97E+13	7.46E+13	1.95E+14	4.29E-07
At-217	-	1.32E-09	1.75E-13	7.87E-10	1.19E-09	2.74E-10	8.89E-01	6.77E+08	1.73E+12	1.31E+16	2.91E+12	1.92E+12	8.36E+12	1.08E-06
At-218	-	3.57E-09	1.25E-12	3.43E-09	3.57E-09	3.03E-09	9.95E-01	1.09E+07	9.26E+09	2.64E+13	9.63E+09	9.26E+09	1.09E+10	3.58E-07
Au-193	S	4.30E-07	7.74E-11	3.08E-07	4.13E-07	1.31E-07	9.50E-01	3.44E+02	2.53E+03	1.41E+07	3.54E+03	2.64E+03	8.32E+03	2.76E-09
Au-194	S	4.93E-06	5.89E-10	2.67E-06	4.22E-06	9.17E-07	9.55E-01	1.54E+02	9.82E+01	8.22E+05	1.81E+02	1.15E+02	5.28E+02	2.41E-10

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
Au-195	S	1.38E-07	3.50E-11	1.20E-07	1.38E-07	6.39E-08	9.60E-01	1.38E+00	3.14E+01	1.24E+05	3.61E+01	3.14E+01	6.78E+01	8.59E-09
Au-195m	-	7.37E-07	1.09E-10	4.85E-07	7.03E-07	1.73E-07	9.17E-01	7.17E+05	3.19E+06	2.16E+10	4.85E+06	3.34E+06	1.36E+07	1.68E-09
Au-198	S	1.71E-06	2.32E-10	1.04E-06	1.58E-06	3.66E-07	8.92E-01	9.38E+01	1.85E+02	1.36E+06	3.04E+02	2.00E+02	8.65E+02	7.58E-10
Au-198m	S	1.89E-06	3.06E-10	1.31E-06	1.83E-06	4.88E-07	9.22E-01	1.10E+02	1.90E+02	1.17E+06	2.74E+02	1.96E+02	7.35E+02	6.63E-10
Au-199	S	2.79E-07	4.66E-11	1.99E-07	2.73E-07	7.43E-08	9.30E-01	8.06E+01	9.34E+02	5.59E+06	1.31E+03	9.55E+02	3.51E+03	4.48E-09
Au-200	S	1.30E-06	1.57E-10	7.11E-07	1.12E-06	2.51E-07	8.97E-01	7.53E+03	1.94E+04	1.61E+08	3.55E+04	2.25E+04	1.01E+05	1.00E-09
Au-200m	S	9.04E-06	1.19E-09	5.36E-06	8.18E-06	1.86E-06	9.78E-01	3.25E+02	1.10E+02	8.39E+05	1.86E+02	1.22E+02	5.37E+02	1.32E-10
Au-201	S	2.29E-07	3.08E-11	1.37E-07	2.08E-07	5.28E-08	9.02E-01	1.38E+04	2.01E+05	1.49E+09	3.36E+05	2.21E+05	8.72E+05	5.68E-09
Ba-126	M	5.83E-07	8.23E-11	3.62E-07	5.41E-07	1.38E-07	9.40E-01	3.77E+03	2.07E+04	1.47E+08	3.34E+04	2.23E+04	8.75E+04	1.34E-09
Ba-128	M	2.10E-07	3.25E-11	1.38E-07	2.00E-07	6.02E-08	9.66E-01	1.04E+02	1.54E+03	9.98E+06	2.35E+03	1.62E+03	5.39E+03	3.68E-09
Ba-131	M	1.78E-06	2.46E-10	1.09E-06	1.64E-06	3.98E-07	9.05E-01	2.14E+01	4.00E+01	2.90E+05	6.54E+01	4.35E+01	1.79E+02	4.75E-10
Ba-131m	M	1.67E-07	3.35E-11	1.31E-07	1.66E-07	5.99E-08	9.54E-01	2.49E+04	4.71E+05	2.35E+09	6.01E+05	4.74E+05	1.31E+06	4.80E-09
Ba-133	M	1.44E-06	2.09E-10	9.17E-07	1.34E-06	3.45E-07	9.12E-01	6.45E-02	1.73E-01	1.19E+03	2.71E-01	1.86E-01	7.21E-01	6.91E-10
Ba-133m	M	1.96E-07	3.00E-11	1.28E-07	1.87E-07	5.36E-08	9.62E-01	1.56E+02	2.49E+03	1.63E+07	3.81E+03	2.61E+03	9.11E+03	4.12E-09
Ba-135m	M	1.71E-07	2.64E-11	1.12E-07	1.62E-07	4.81E-08	9.61E-01	2.12E+02	3.87E+03	2.51E+07	5.91E+03	4.09E+03	1.38E+04	4.80E-09
Ba-137m	-	2.69E-06	3.42E-10	1.54E-06	2.39E-06	5.37E-07	8.77E-01	1.43E+05	1.82E+05	1.43E+09	3.18E+05	2.05E+05	9.12E+05	3.39E-10
Ba-139	M	1.65E-07	2.62E-11	1.11E-07	1.58E-07	5.22E-08	9.09E-01	4.40E+03	8.84E+04	5.56E+08	1.31E+05	9.23E+04	2.79E+05	5.41E-09
Ba-140	M	7.62E-07	1.02E-10	4.59E-07	6.96E-07	1.64E-07	8.88E-01	1.99E+01	8.83E+01	6.60E+05	1.47E+02	9.67E+01	4.10E+02	1.21E-09
Ba-141	M	3.80E-06	4.79E-10	2.17E-06	3.35E-06	7.56E-07	8.94E-01	1.99E+04	1.77E+04	1.40E+08	3.09E+04	2.00E+04	8.88E+04	2.42E-10
Ba-142	M	4.85E-06	5.91E-10	2.69E-06	4.20E-06	9.25E-07	9.05E-01	3.44E+04	2.36E+04	1.93E+08	4.25E+04	2.72E+04	1.24E+05	1.89E-10
Be-10	S	7.43E-10	1.57E-13	5.75E-10	7.31E-10	6.66E-10	9.27E-01	4.33E-07	1.46E+02	6.89E+05	1.88E+02	1.48E+02	1.62E+02	6.52E-03
Be-7	S	2.13E-07	2.84E-11	1.27E-07	1.94E-07	4.44E-08	8.86E-01	4.75E+00	7.57E+01	5.67E+05	1.27E+02	8.31E+01	3.63E+02	2.17E-10
Bi-200	M	1.06E-05	1.35E-09	6.11E-06	9.41E-06	2.13E-06	9.24E-01	1.00E+04	3.07E+03	2.41E+07	5.33E+03	3.46E+03	1.53E+04	1.19E-10
Bi-201	M	6.05E-06	7.53E-10	3.39E-06	5.28E-06	1.18E-06	8.67E-01	3.37E+03	1.93E+03	1.55E+07	3.45E+03	2.22E+03	9.92E+03	2.24E-10
Bi-202	M	1.24E-05	1.53E-09	6.94E-06	1.09E-05	2.39E-06	9.51E-01	3.64E+03	9.28E+02	7.52E+06	1.66E+03	1.06E+03	4.81E+03	1.00E-10
Bi-203	M	1.16E-05	1.32E-09	6.07E-06	9.73E-06	2.06E-06	9.51E-01	5.16E+02	1.41E+02	1.24E+06	2.69E+02	1.68E+02	7.93E+02	1.07E-10
Bi-205	M	8.19E-06	9.38E-10	4.30E-06	6.87E-06	1.45E-06	9.62E-01	1.65E+01	6.31E+00	5.51E+04	1.20E+01	7.52E+00	3.56E+01	1.52E-10
Bi-206	M	1.52E-05	1.85E-09	8.40E-06	1.32E-05	2.88E-06	9.40E-01	4.05E+01	8.53E+00	7.01E+04	1.54E+01	9.82E+00	4.50E+01	8.42E-11
Bi-207	M	7.08E-06	8.69E-10	3.92E-06	6.14E-06	1.35E-06	8.65E-01	1.82E-02	2.13E-02	1.73E+02	3.84E-02	2.45E-02	1.12E-01	4.68E-10
Bi-210	M	2.76E-09	5.96E-13	2.04E-09	2.67E-09	4.82E-09	9.27E-01	5.05E+01	5.94E+04	2.75E+08	8.03E+04	6.14E+04	3.40E+04	4.79E-07
Bi-210m	M	1.01E-06	1.44E-10	6.45E-07	9.50E-07	2.25E-07	9.06E-01	2.31E-07	1.10E-01	7.69E+02	1.72E-01	1.17E-01	4.92E-01	1.93E-04
Bi-211	M	1.88E-07	2.64E-11	1.18E-07	1.75E-07	4.13E-08	9.03E-01	1.70E+05	3.02E+06	2.15E+10	4.81E+06	3.24E+06	1.37E+07	7.26E-09
Bi-212	M	8.88E-07	1.06E-10	4.82E-07	7.64E-07	1.71E-07	9.91E-01	6.02E+03	2.06E+04	1.72E+08	3.79E+04	2.39E+04	1.07E+05	1.41E-09
Bi-212+D	M	7.22E-06	7.57E-10	3.53E-06	5.80E-06	1.17E-06	8.96E-01	6.02E+03	2.80E+03	2.67E+07	5.72E+03	3.48E+03	1.73E+04	1.91E-10
Bi-213	M	5.65E-07	7.66E-11	3.43E-07	5.19E-07	1.25E-07	1.00E+00	7.98E+03	4.25E+04	3.13E+08	7.00E+04	4.63E+04	1.92E+05	2.20E-09
Bi-213+D	M	7.78E-07	1.01E-10	4.56E-07	6.98E-07	1.63E-07	9.68E-01	7.98E+03	3.19E+04	2.46E+08	5.44E+04	3.55E+04	1.52E+05	1.65E-09
Bi-214	M	7.49E-06	8.44E-10	3.89E-06	6.26E-06	1.31E-06	9.25E-01	1.83E+04	7.95E+03	7.05E+07	1.53E+04	9.51E+03	4.54E+04	1.80E-10
Bk-245	M	7.09E-07	1.18E-10	5.03E-07	6.89E-07	1.90E-07	9.98E-01	5.12E+01	2.18E+02	1.31E+06	3.07E+02	2.24E+02	8.12E+02	2.02E-09
Bk-246	M	4.25E-06	5.33E-10	2.39E-06	3.74E-06	8.34E-07	8.80E-01	1.38E+02	1.11E+02	8.87E+05	1.98E+02	1.26E+02	5.67E+02	3.84E-10
Bk-247	M	3.10E-07	5.36E-11	2.23E-07	3.01E-07	8.72E-08	9.28E-01	5.02E-04	3.51E-01	2.03E+03	4.88E-01	3.62E-01	1.25E+00	3.35E-07
Bk-249	M	2.63E-12	9.88E-16	2.43E-12	2.62E-12	3.91E-12	9.11E-01	7.90E-01	9.93E+05	2.64E+09	1.07E+06	9.96E+05	6.68E+05	6.07E-04
Bk-250	M	4.23E-06	5.03E-10	2.29E-06	3.63E-06	7.84E-07	8.51E-01	1.88E+03	1.57E+03	1.32E+07	2.91E+03	1.84E+03	8.50E+03	4.05E-10
Br-74	M	2.32E-05	2.45E-09	1.14E-05	1.87E-05	3.75E-06	8.48E-01	1.44E+04	2.20E+03	2.08E+07	4.48E+03	2.73E+03	1.36E+04	2.20E-11
Br-74m	M	2.00E-05	2.27E-09	1.04E-05	1.67E-05	3.52E-06	8.67E-01	8.78E+03	1.52E+03	1.34E+07	2.93E+03	1.82E+03	8.65E+03	2.49E-11
Br-75	M	5.21E-06	6.96E-10	3.13E-06	4.77E-06	1.09E-06	8.84E-01	3.72E+03	2.43E+03	1.82E+07	4.04E+03	2.65E+03	1.16E+04	9.51E-11
Br-76	M	1.30E-05	1.46E-09	6.73E-06	1.08E-05	2.25E-06	8.84E-01	3.75E+02	9.81E+01	8.74E+05	1.90E+02	1.18E+02	5.67E+02	3.86E-11
Br-77	M	1.34E-06	1.80E-10	8.09E-07	1.23E-06	2.81E-07	9.22E-01	1.08E+02	2.64E+02	1.97E+06	4.37E+02	2.88E+02	1.26E+03	3.64E-10
Br-80	M	3.55E-07	4.60E-11	2.08E-07	3.19E-07	7.52E-08	8.88E-01	2.09E+04	2.00E+05	1.54E+09	3.41E+05	2.22E+05	9.43E+05	1.48E-09
Br-80m	M	5.96E-09	2.90E-12	5.95E-09	5.96E-09	1.06E-08	9.95E-01	1.37E+03	6.97E+05	1.43E+09	6.98E+05	6.97E+05	3.92E+05	7.88E-08
Br-82	M	1.24E-05	1.51E-09	6.86E-06	1.08E-05	2.35E-06	8.65E-01	1.72E+02	4.82E+01	3.96E+05	8.72E+01	5.54E+01	2.55E+02	4.46E-11
Br-83	M	3.46E-08	4.67E-12	2.07E-08	3.14E-08	9.74E-09	8.81E-01	2.54E+03	2.51E+05	1.86E+09	4.19E+05	2.76E+05	8.91E+05	1.59E-08
Br-84	M	9.36E-06	9.74E-10	4.53E-06	7.45E-06	1.50E-06	8.49E-01	1.15E+04	4.34E+03	4.17E+07	8.96E+03	5.45E+03	2.71E+04	6.17E-11
C-11	M	4.45E-06	5.86E-10	2.64E-06	4.04E-06	9.23E-07	8.83E-01	1.79E+04	1.37E+04	1.04E+08	2.31E+04	1.51E+04	6.60E+04	1.63E-11
C-14	M	7.84E-12	2.81E-15	7.31E-12	7.84E-12	9.62E-12	9.27E-01	1.21E-04	1.38E+04	3.86E+07	1.48E+04	1.38E+04	1.13E+04	3.11E-03
Ca-41	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.95E-06	-	-	-	-	-	-
Ca-45	M	3.96E-11	1.14E-14	3.46E-11	3.96E-11	3.03E-11	1.00E+00	1.55E+00	1.18E+05	4.10E+08	1.35E+05	1.18E+05	1.54E+05	6.63E-06
Ca-47	M	5.24E-06	5.99E-10	2.76E-06	4.43E-06	9.29E-07	8.36E-01	5.58E+01	3.84E+01	3.35E+05	7.28E+01	4.54E+01	2.16E+02	6.26E-11
Ca-49	M	1.75E-05	1.64E-09	7.73E-06	1.32E-05	2.46E-06	7.78E-01	4.18E+04	9.24E+03	9.85E+07	2.09E+04	1.22E+04	6.57E+04	2.10E-11
Cd-104	S	9.71E-07	1.33E-10	5.82E-07	8.75E-07	2.17E-07	9.32E-01	6.31E+03	2.10E+04	1.53E+08	3.50E+04	2.33E+04	9.39E+04	6.71E-10
Cd-107	S	3.48E-08	6.12E-12	2.32E-08	3.24E-08	1.75E-08	9.75E-01	9.35E+02	8.29E+04	4.72E+08	1.24E+05	8.91E+04	1.65E+05	1.84E-08
Cd-109	S	8.74E-09	2.56E-12	7.51E-09	8.75E-09	1.15E-08	9.96E-01	5.45E-01	1.88E+02	6.43E+05	2.19E+02	1.88E+02	1.43E+02	7.31E-08
Cd-113	F	7.36E-11	1.94E-14	6.24E-11	7.34E-11	4.74E-11	9.27E-01	7.45E-17	1.48E+03	5.61E+06	1.75E+03	1.48E+03	2.30E+03	4.35E+09

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
Cd-113m	F	4.45E-10	9.64E-14	3.47E-10	4.38E-10	3.75E-10	9.27E-01	5.10E-02	4.75E+02	2.19E+06	6.09E+02	4.82E+02	5.63E+02	2.04E-06
Cd-115	S	1.01E-06	1.33E-10	6.02E-07	9.19E-07	2.11E-07	8.86E-01	1.14E+02	3.82E+02	2.90E+06	6.41E+02	4.20E+02	1.83E+03	7.50E-10
Cd-115m	S	1.13E-07	1.41E-11	6.23E-08	9.76E-08	2.94E-08	8.43E-01	5.67E+00	1.79E+02	1.44E+06	3.25E+02	2.07E+02	6.89E+02	7.05E-09
Cd-117	S	5.23E-06	6.12E-10	2.80E-06	4.46E-06	9.50E-07	9.02E-01	2.44E+03	1.55E+03	1.33E+07	2.90E+03	1.82E+03	8.56E+03	1.45E-10
Cd-117m	S	1.03E-05	1.13E-09	5.24E-06	8.50E-06	1.75E-06	8.79E-01	1.81E+03	6.00E+02	5.47E+06	1.18E+03	7.28E+02	3.53E+03	7.54E-11
Ce-134	M	8.25E-09	4.25E-12	8.23E-09	8.25E-09	1.67E-08	9.76E-01	8.43E+01	3.15E+04	6.12E+07	3.16E+04	3.15E+04	1.56E+04	9.72E-08
Ce-135	M	7.74E-06	1.02E-09	4.59E-06	7.02E-06	1.59E-06	9.10E-01	3.45E+02	1.47E+02	1.12E+06	2.48E+02	1.62E+02	7.17E+02	1.12E-10
Ce-137	M	4.46E-08	9.12E-12	3.00E-08	4.15E-08	2.44E-08	9.70E-01	6.75E+02	4.69E+04	2.29E+08	6.97E+04	5.04E+04	8.57E+04	1.85E-08
Ce-137m	M	1.38E-07	2.21E-11	9.05E-08	1.31E-07	4.18E-08	9.44E-01	1.76E+02	4.08E+03	2.55E+07	6.22E+03	4.29E+03	1.35E+04	6.14E-09
Ce-139	M	4.54E-07	7.62E-11	3.21E-07	4.44E-07	1.30E-07	9.49E-01	1.84E+00	1.28E+01	7.65E+04	1.81E+01	1.31E+01	4.48E+01	1.88E-09
Ce-141	M	2.27E-07	3.89E-11	1.65E-07	2.23E-07	6.35E-08	9.38E-01	7.78E+00	1.10E+02	6.42E+05	1.51E+02	1.12E+02	3.93E+02	3.87E-09
Ce-143	M	1.09E-06	1.52E-10	6.69E-07	1.00E-06	2.50E-07	9.04E-01	1.84E+02	5.62E+02	4.03E+06	9.15E+02	6.12E+02	2.45E+03	8.47E-10
Ce-144	M	5.02E-08	9.48E-12	3.80E-08	4.98E-08	1.66E-08	9.35E-01	8.90E-01	5.70E+01	3.02E+05	7.53E+01	5.75E+01	1.72E+02	1.79E-08
Ce-144+D	M	2.44E-07	3.34E-11	1.42E-07	2.13E-07	6.60E-08	8.81E-01	8.90E-01	1.25E+01	9.10E+04	2.14E+01	1.43E+01	4.60E+01	3.91E-09
Cf-244	M	6.83E-11	4.17E-14	6.83E-11	6.83E-11	5.09E-10	9.99E-01	1.88E+04	8.28E+08	1.36E+12	8.28E+08	8.28E+08	1.11E+08	2.09E-05
Cf-246	M	9.25E-11	3.73E-14	8.21E-11	9.24E-11	3.61E-10	9.98E-01	1.70E+02	5.54E+06	1.37E+10	6.24E+06	5.55E+06	1.42E+06	1.56E-05
Cf-248	M	4.73E-11	2.86E-14	4.73E-11	4.73E-11	3.47E-10	9.99E-01	7.58E-01	4.83E+04	7.99E+07	4.83E+04	4.83E+04	6.58E+03	3.06E-05
Cf-249	M	1.37E-06	1.88E-10	8.46E-07	1.26E-06	2.96E-07	9.62E-01	1.98E-03	7.84E-02	5.71E+02	1.27E-01	8.52E-02	3.63E-01	1.92E-08
Cf-250	M	4.49E-11	2.72E-14	4.49E-11	4.49E-11	3.31E-10	9.99E-01	5.30E-02	4.46E+03	7.37E+06	4.46E+03	4.46E+03	6.06E+02	4.09E-05
Cf-251	M	3.76E-07	6.35E-11	2.70E-07	3.69E-07	1.04E-07	9.55E-01	7.72E-04	2.83E-01	1.67E+03	3.93E-01	2.88E-01	1.02E+00	1.78E-07
Cf-252	-	2.37E-06	4.20E-07	1.21E-06	1.95E-06	4.04E-07	1.69E+00	2.63E-01	1.97E-01	1.11E+00	3.87E-01	2.40E-01	1.16E+00	3.67E-10
Cf-253	M	4.86E-11	1.37E-14	4.19E-11	4.84E-11	3.99E-11	9.98E-01	1.42E+01	8.81E+05	3.13E+09	1.02E+06	8.85E+05	1.07E+06	3.05E-05
Cf-254	M	8.69E-05	1.53E-05	4.43E-05	7.15E-05	1.47E-05	1.68E+00	4.18E+00	8.62E-02	4.89E-01	1.69E-01	1.05E-01	5.09E-01	1.02E-11
Cl-36	M	1.74E-09	3.13E-13	1.21E-09	1.66E-09	1.78E-09	8.83E-01	2.30E-06	6.53E+01	3.63E+05	9.39E+01	6.84E+01	6.38E+01	1.98E-03
Cl-38	M	7.93E-06	8.20E-10	3.83E-06	6.33E-06	1.26E-06	8.07E-01	9.79E+03	4.60E+03	4.45E+07	9.53E+03	5.77E+03	2.90E+04	3.47E-11
Cl-39	M	7.09E-06	8.09E-10	3.71E-06	5.97E-06	1.26E-06	8.34E-01	6.55E+03	3.33E+03	2.92E+07	6.37E+03	3.96E+03	1.88E+04	3.85E-11
Cm-238	M	1.90E-07	3.63E-11	1.48E-07	1.89E-07	5.99E-08	9.58E-01	2.53E+03	4.18E+04	2.19E+08	5.37E+04	4.20E+04	1.33E+05	7.63E-09
Cm-240	M	6.19E-11	3.62E-14	6.19E-11	6.19E-11	4.74E-10	9.99E-01	9.37E+00	4.56E+05	7.79E+08	4.56E+05	4.56E+05	5.95E+04	2.27E-05
Cm-241	M	1.94E-06	2.73E-10	1.20E-06	1.79E-06	4.33E-07	9.99E-01	7.71E+00	1.20E+01	8.51E+04	1.94E+01	1.30E+01	5.36E+01	7.26E-10
Cm-242	M	7.73E-11	3.59E-14	7.02E-11	7.63E-11	4.33E-10	9.99E-01	1.55E+00	6.05E+04	1.30E+08	6.67E+04	6.13E+04	1.08E+04	1.83E-05
Cm-243	M	4.19E-07	6.76E-11	2.91E-07	4.06E-07	1.09E-07	9.49E-01	2.43E-02	3.55E-01	2.20E+03	5.12E-01	3.67E-01	1.37E+00	6.89E-09
Cm-244	M	4.85E-11	2.91E-14	4.85E-11	4.85E-11	3.96E-10	9.99E-01	3.83E-02	3.48E+03	5.80E+06	3.48E+03	3.48E+03	4.26E+02	4.31E-05
Cm-245	M	2.38E-07	4.44E-11	1.82E-07	2.37E-07	7.35E-08	9.52E-01	8.15E-05	4.43E-01	2.38E+03	5.80E-01	4.45E-01	1.44E+00	2.58E-06
Cm-246	M	4.57E-11	2.67E-14	4.56E-11	4.57E-11	3.54E-10	9.99E-01	1.47E-04	2.20E+03	3.77E+06	2.21E+03	2.20E+03	2.84E+02	7.17E-03
Cm-247	M	1.31E-06	1.80E-10	8.06E-07	1.21E-06	2.81E-07	9.25E-01	4.44E-08	8.28E-02	6.02E+02	1.35E-01	8.96E-02	3.86E-01	8.93E-04
Cm-248	-	6.81E-06	1.20E-06	3.47E-06	5.60E-06	1.16E-06	1.68E+00	1.99E-06	8.77E-03	4.98E-02	1.72E-02	1.07E-02	5.15E-02	2.12E-06
Cm-249	M	8.51E-08	1.12E-11	5.02E-08	7.69E-08	1.93E-08	9.09E-01	5.68E+03	2.21E+05	1.68E+09	3.74E+05	2.44E+05	9.74E+05	1.88E-08
Cm-250	M	5.03E-05	8.90E-06	2.57E-05	4.15E-06	8.55E-06	1.68E+00	7.14E-05	1.19E-03	6.71E-03	2.33E-03	1.44E-02	6.99E-03	8.07E-09
Cm-250+D	M	1.31E-06	1.61E-10	7.29E-07	1.14E-06	2.54E-07	1.68E+00	7.14E-05	4.56E-02	3.71E+02	8.20E-02	5.24E-02	2.35E-01	3.10E-07
Co-55	M	9.22E-06	1.14E-09	5.17E-06	8.08E-06	1.78E-06	8.48E-01	3.46E+02	1.33E+02	1.08E+06	2.38E+02	1.52E+02	6.90E+02	4.11E-11
Co-56	M	1.80E-05	1.99E-09	9.15E-06	1.48E-05	3.05E-06	8.23E-01	3.21E+00	6.52E-01	5.90E+03	1.28E+00	7.93E-01	3.85E+00	2.21E-11
Co-57	M	3.55E-07	6.34E-11	2.66E-07	3.52E-07	1.01E-07	9.71E-01	9.34E-01	8.15E+00	4.56E+04	1.09E+01	8.22E+00	2.86E+01	9.65E-10
Co-58	M	4.49E-06	5.59E-10	2.53E-06	3.96E-06	8.71E-07	8.63E-01	3.57E+00	2.77E+00	2.23E+04	4.92E+00	3.15E+00	1.43E+01	8.74E-11
Co-58m	M	1.00E-12	6.17E-16	1.01E-12	1.00E-12	4.47E-12	9.94E-01	6.63E+02	2.01E+09	3.25E+12	1.99E+09	2.01E+09	4.49E+08	3.41E-04
Co-60	M	1.24E-05	1.41E-09	6.48E-06	1.04E-05	2.18E-06	8.34E-01	1.31E-01	3.90E-02	3.43E+02	7.46E-02	4.65E-02	2.22E-01	3.45E-11
Co-60m	M	1.86E-08	2.39E-12	1.02E-08	1.58E-08	3.94E-09	9.25E-01	3.48E+04	6.08E+06	4.73E+10	1.11E+07	7.16E+06	2.87E+07	2.04E-08
Co-61	M	2.48E-07	4.43E-11	1.69E-07	2.28E-07	8.18E-08	9.38E-01	3.68E+03	4.76E+04	2.66E+08	6.98E+04	5.18E+04	1.44E+05	1.53E-09
Co-62m	M	1.35E-05	1.52E-09	6.97E-06	1.13E-05	2.35E-06	8.28E-01	2.62E+04	7.05E+03	6.26E+07	1.37E+04	8.42E+03	4.05E+04	3.24E-11
Cr-48	S	1.62E-06	2.42E-10	1.07E-06	1.54E-06	3.78E-07	9.13E-01	2.64E+02	5.38E+02	3.60E+06	8.14E+02	5.66E+02	2.31E+03	1.89E-10
Cr-49	S	4.43E-06	6.00E-10	2.67E-06	4.04E-06	9.52E-07	8.92E-01	8.65E+03	6.59E+03	4.87E+07	1.09E+04	7.23E+03	3.07E+04	7.24E-11
Cr-51	S	1.27E-07	1.79E-11	8.07E-08	1.20E-07	2.79E-08	9.03E-01	9.13E+00	2.40E+02	1.70E+06	3.77E+02	2.54E+02	1.09E+03	2.60E-09
Cs-125	F	2.92E-06	3.83E-10	1.72E-06	2.64E-06	6.10E-07	8.78E-01	8.09E+03	9.50E+03	7.24E+07	1.61E+04	1.05E+04	4.55E+04	2.85E-10
Cs-126	-	4.74E-06	6.32E-10	2.84E-06	4.33E-06	1.00E-06	8.87E-01	2.22E+05	1.59E+05	1.19E+09	2.65E+05	1.74E+05	7.53E+05	1.75E-10
Cs-127	F	1.68E-06	2.29E-10	1.02E-06	1.54E-06	3.68E-07	8.98E-01	9.71E+02	1.94E+03	1.42E+07	3.19E+03	2.11E+03	8.84E+03	4.91E-10
Cs-128	F	3.92E-06	5.17E-10	2.32E-06	3.56E-06	8.22E-07	8.85E-01	9.34E+04	8.10E+04	6.14E+08	1.37E+05	8.92E+04	3.86E+05	2.15E-10
Cs-129	F	1.05E-06	1.46E-10	6.47E-07	9.71E-07	2.42E-07	8.98E-01	1.89E+02	6.04E+02	4.35E+06	9.81E+02	6.53E+02	2.62E+03	7.99E-10
Cs-130	F	2.22E-06	2.92E-10	1.31E-06	2.01E-06	4.67E-07	8.90E-01	1.22E+04	1.86E+04	1.41E+08	3.14E+04	2.05E+04	8.82E+04	3.84E-10
Cs-131	F	4.91E-09	2.76E-12	4.91E-09	4.91E-09	1.33E-08	9.83E-01	2.61E+01	1.63E+04	2.89E+07	1.63E+04	1.63E+04	6.01E+03	1.58E-07
Cs-132	F	3.11E-06	3.95E-10	1.78E-06	2.76E-06	6.26E-07	8.71E-01	3.91E+01	4.34E+01	3.42E+05	7.58E+01	4.89E+01	2.16E+02	2.85E-10
Cs-134	F	7.10E-06	8.94E-10	4.04E-06	6.30E-06	1.39E-06	8.65E-01	3.36E-01	1.65E-01	1.31E+03	2.89E-01	1.86E-01	8.41E-01	1.27E-10
Cs-134m	F	5.02E-08	9.82E-12	3.82E-08	4.99E-08	1.95E-08	9.71E-01	2.09E+03	1.29E+05	6.61E+08	1.70E+05	1.30E+05	3.33E+05	1.60E-08
Cs-135	F	2.36E-11	7.34E-15	2.11E-11	2.36E-11	2.11E-11	9.27E-01	3.01E-07	4.58E+03	1.47E+07	5.13E+03	4.58E+03	5.13E+03	3.99E+00

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
Cs-135m	F	7.37E-06	9.11E-10	4.12E-06	6.46E-06	1.41E-06	8.61E-01	6.87E+03	3.26E+03	2.64E+07	5.83E+03	3.72E+03	1.70E+04	1.24E-10
Cs-136	F	1.00E-05	1.24E-09	5.58E-06	8.76E-06	1.92E-06	8.56E-01	1.93E+01	6.79E+00	5.47E+04	1.22E+01	7.75E+00	3.53E+01	9.28E-11
Cs-137	F	5.33E-10	1.16E-13	4.10E-10	5.23E-10	5.34E-10	9.27E-01	2.31E-02	2.81E+02	1.29E+06	3.66E+02	2.87E+02	2.81E+02	3.24E-06
Cs-137+D	F	2.54E-06	3.24E-10	1.46E-06	2.27E-06	5.09E-07	8.77E-01	2.31E-02	6.24E-02	4.89E+02	1.09E-01	6.98E-02	3.11E-01	7.18E-10
Cs-138	F	1.19E-05	1.32E-09	6.09E-06	9.83E-06	2.04E-06	8.85E-01	1.13E+04	3.23E+03	2.91E+07	6.31E+03	3.91E+03	1.89E+04	7.65E-11
Cu-60	S	1.93E-05	2.17E-09	1.00E-05	1.61E-05	3.36E-06	8.32E-01	1.57E+04	2.94E+03	2.62E+07	5.68E+03	3.53E+03	1.69E+04	2.18E-11
Cu-61	S	3.63E-06	4.75E-10	2.14E-06	3.28E-06	7.46E-07	8.51E-01	1.78E+03	1.73E+03	1.33E+07	2.94E+03	1.92E+03	8.44E+03	1.15E-10
Cu-62	-	4.43E-06	5.85E-10	2.64E-06	4.03E-06	9.30E-07	8.82E-01	3.74E+04	2.88E+04	2.18E+08	4.83E+04	3.17E+04	1.37E+05	9.26E-11
Cu-64	S	8.30E-07	1.09E-10	4.91E-07	7.52E-07	1.71E-07	8.82E-01	4.78E+02	1.96E+03	1.50E+07	3.32E+03	2.17E+03	9.54E+03	5.10E-10
Cu-66	-	4.32E-07	5.31E-11	2.37E-07	3.73E-07	9.43E-08	8.46E-01	7.14E+04	5.88E+05	4.78E+09	1.07E+06	6.81E+05	2.69E+06	1.05E-09
Cu-67	S	3.83E-07	6.21E-11	2.69E-07	3.73E-07	9.81E-08	9.24E-01	9.81E+01	8.34E+02	5.15E+06	1.19E+03	8.57E+02	3.26E+03	1.11E-09
Dy-155	M	2.44E-06	3.15E-10	1.40E-06	2.16E-06	5.03E-07	9.16E-01	6.07E+02	8.17E+02	6.33E+06	1.42E+03	9.23E+02	3.96E+03	4.05E-10
Dy-157	M	1.32E-06	1.92E-10	8.42E-07	1.24E-06	3.11E-07	9.04E-01	7.49E+02	1.89E+03	1.30E+07	2.96E+03	2.01E+03	8.02E+03	7.68E-10
Dy-159	M	3.19E-08	1.27E-11	3.13E-08	3.19E-08	3.27E-08	9.60E-01	1.75E+00	1.72E+02	4.32E+05	1.75E+02	1.72E+02	1.68E+02	3.03E-08
Dy-165	M	9.50E-08	1.42E-11	5.95E-08	8.69E-08	2.85E-08	9.40E-01	2.60E+03	8.76E+04	5.86E+08	1.40E+05	9.58E+04	2.92E+05	1.08E-08
Dy-166	M	6.03E-08	1.52E-11	4.94E-08	5.90E-08	3.10E-08	9.44E-01	7.44E+01	3.93E+03	1.56E+07	4.80E+03	4.02E+03	7.65E+03	1.70E-08
Er-161	M	4.09E-06	5.09E-10	2.29E-06	3.56E-06	8.04E-07	9.42E-01	1.87E+03	1.46E+03	1.18E+07	2.61E+03	1.68E+03	7.44E+03	2.44E-10
Er-165	M	3.05E-08	1.16E-11	2.98E-08	3.05E-08	2.78E-08	9.57E-01	5.86E+02	6.04E+04	1.59E+08	6.18E+04	6.04E+04	6.63E+04	3.30E-08
Er-169	M	9.10E-11	2.32E-14	7.63E-11	9.05E-11	5.56E-11	9.27E-01	2.72E+01	9.70E+05	3.81E+09	1.16E+06	9.75E+05	1.59E+06	1.17E-05
Er-171	M	1.42E-06	2.09E-10	9.20E-07	1.34E-06	3.36E-07	9.05E-01	8.07E+02	1.89E+03	1.28E+07	2.92E+03	2.00E+03	7.99E+03	7.77E-10
Er-172	M	2.20E-06	2.94E-10	1.31E-06	2.00E-06	4.66E-07	9.28E-01	1.23E+02	1.81E+02	1.36E+06	3.05E+02	2.00E+02	8.57E+02	4.92E-10
Es-250	M	1.69E-06	2.17E-10	9.71E-07	1.48E-06	3.41E-07	8.88E-01	2.89E+03	5.80E+03	4.51E+07	1.01E+04	6.62E+03	2.87E+04	9.73E-10
Es-251	M	2.55E-07	4.65E-11	1.93E-07	2.53E-07	7.65E-08	9.48E-01	1.84E+02	2.29E+03	1.26E+07	3.03E+03	2.31E+03	7.63E+03	6.06E-09
Es-253	M	1.25E-09	1.97E-13	8.11E-10	1.18E-09	5.10E-10	9.95E-01	1.24E+01	2.99E+04	1.90E+08	4.61E+04	3.17E+04	7.33E+04	1.19E-06
Es-254	M	8.55E-09	1.87E-12	6.34E-09	8.23E-09	6.95E-09	9.95E-01	9.17E-01	3.24E+02	1.48E+06	4.38E+02	3.37E+02	3.99E+02	1.74E-07
Es-254+D	M	4.24E-06	5.05E-10	2.30E-06	3.64E-06	7.91E-07	8.53E-01	9.17E-01	7.63E-01	6.41E+03	1.41E+00	8.89E-01	4.09E+00	4.10E-10
Es-254m	M	2.10E-06	2.67E-10	1.20E-06	1.87E-06	4.20E-07	9.95E-01	1.54E+02	2.22E+02	1.75E+06	3.89E+02	2.50E+02	1.11E+03	7.10E-10
Eu-145	M	6.95E-06	8.12E-10	3.70E-06	5.90E-06	1.26E-06	8.75E-01	4.26E+01	2.11E+01	1.80E+05	3.96E+01	2.48E+01	1.16E+02	1.39E-10
Eu-146	M	1.16E-05	1.41E-09	6.42E-06	1.01E-05	2.21E-06	8.71E-01	5.49E+01	1.63E+01	1.34E+05	2.95E+01	1.88E+01	8.58E+01	8.44E-11
Eu-147	M	2.04E-06	2.67E-10	1.18E-06	1.82E-06	4.31E-07	8.66E-01	1.05E+01	1.79E+01	1.37E+05	3.10E+01	2.01E+01	8.50E+01	4.86E-10
Eu-148	M	9.85E-06	1.24E-09	5.58E-06	8.69E-06	1.94E-06	9.14E-01	4.64E+00	1.55E+00	1.23E+04	2.74E+00	1.76E+00	7.88E+00	9.60E-11
Eu-149	M	1.42E-07	2.51E-11	9.57E-08	1.34E-07	4.99E-08	9.24E-01	2.72E+00	6.23E+01	3.52E+05	9.24E+01	6.60E+01	1.77E+02	6.63E-09
Eu-150	M	6.49E-06	8.44E-10	3.80E-06	5.84E-06	1.33E-06	9.01E-01	2.03E-02	2.29E-02	1.76E+02	3.91E-02	2.54E-02	1.12E-01	3.29E-10
Eu-150m	M	1.95E-07	2.59E-11	1.15E-07	1.75E-07	4.42E-08	8.56E-01	4.81E+02	8.67E+03	6.53E+07	1.47E+04	9.66E+03	3.83E+04	5.25E-09
Eu-152	M	5.30E-06	6.44E-10	2.91E-06	4.58E-06	1.01E-06	9.19E-01	5.20E-02	4.07E-02	3.35E+02	7.41E-02	4.71E-02	2.13E-01	2.31E-10
Eu-152m	M	1.33E-06	1.66E-10	7.41E-07	1.16E-06	2.67E-07	9.10E-01	6.51E+02	1.62E+03	1.30E+07	2.91E+03	1.86E+03	8.07E+03	7.33E-10
Eu-154	M	5.83E-06	7.00E-10	3.18E-06	5.01E-06	1.09E-06	9.35E-01	7.88E-02	4.80E-02	4.00E+02	8.80E-02	5.58E-02	2.57E-01	1.82E-10
Eu-155	M	1.24E-07	2.73E-11	1.02E-07	1.24E-07	4.85E-08	9.41E-01	1.40E-01	3.66E+00	1.66E+04	4.45E+00	3.66E+00	9.35E+00	7.87E-09
Eu-156	M	6.62E-06	7.39E-10	3.41E-06	5.50E-06	1.15E-06	8.97E-01	1.67E+01	8.44E+00	7.56E+04	1.64E+01	1.02E+01	4.86E+01	1.53E-10
Eu-157	M	9.60E-07	1.38E-10	5.96E-07	8.84E-07	2.31E-07	8.95E-01	4.01E+02	1.40E+03	9.76E+06	2.26E+03	1.52E+03	5.83E+03	1.07E-09
Eu-158	M	5.06E-06	5.99E-10	2.72E-06	4.32E-06	9.41E-07	8.56E-01	7.94E+03	5.51E+03	4.66E+07	1.03E+04	6.46E+03	2.96E+04	2.13E-10
F-18	M	4.45E-06	5.88E-10	2.65E-06	4.05E-06	9.22E-07	8.83E-01	3.32E+03	2.54E+03	1.92E+07	4.27E+03	2.79E+03	1.23E+04	2.67E-11
Fe-52	M	3.07E-06	4.20E-10	1.88E-06	2.83E-06	6.60E-07	8.96E-01	7.34E+02	8.02E+02	5.87E+06	1.31E+03	8.71E+02	3.73E+03	1.10E-10
Fe-55	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.57E-01	-	-	-	-	-	-
Fe-59	M	5.83E-06	6.73E-10	3.08E-06	4.93E-06	1.04E-06	8.39E-01	5.68E+00	3.49E+00	3.03E+04	6.61E+00	4.13E+00	1.96E+01	7.04E-11
Fe-60	M	6.38E-12	2.42E-15	6.04E-12	6.38E-12	8.74E-12	9.27E-01	6.93E-06	1.70E+04	4.47E+07	1.79E+04	1.70E+04	1.24E+04	2.85E-01
Fe-60+D	M	1.86E-08	2.40E-12	1.02E-08	1.58E-08	3.94E-09	9.25E-01	6.93E-06	5.83E+00	4.52E+04	1.06E+01	6.86E+00	2.75E+01	9.79E-05
Fm-252	M	5.09E-11	3.13E-14	5.10E-11	5.09E-11	3.41E-10	9.98E-01	2.67E+02	1.58E+07	2.58E+10	1.58E+07	1.58E+07	2.36E+06	2.90E-05
Fm-253	M	2.24E-07	3.98E-11	1.67E-07	2.22E-07	6.53E-08	9.96E-01	8.43E+01	1.14E+03	6.40E+06	1.53E+03	1.15E+03	3.90E+03	6.62E-09
Fm-254	M	1.23E-10	4.71E-14	1.09E-10	1.23E-10	3.84E-10	9.97E-01	1.87E+03	4.60E+07	1.20E+11	5.19E+07	4.60E+07	1.47E+07	1.21E-05
Fm-255	M	3.85E-09	1.02E-12	3.24E-09	3.83E-09	4.34E-09	9.91E-01	3.02E+02	2.39E+05	9.00E+08	2.83E+05	2.40E+05	2.12E+05	3.90E-07
Fm-257	M	3.06E-07	5.28E-11	2.23E-07	3.00E-07	8.68E-08	9.39E-01	2.52E+00	2.64E+01	1.53E+05	3.62E+01	2.69E+01	9.29E+01	5.22E-09
Fr-219	-	1.44E-08	1.97E-12	8.85E-09	1.33E-08	3.11E-09	8.97E-01	1.04E+09	2.42E+11	1.77E+15	3.94E+11	2.62E+11	1.12E+12	9.90E-08
Fr-220	-	3.25E-08	5.59E-12	2.36E-08	3.19E-08	9.08E-09	9.68E-01	7.98E+05	7.63E+07	4.44E+11	1.05E+08	7.77E+07	2.73E+08	4.08E-08
Fr-220+D	-	7.26E-06	7.63E-10	3.56E-06	5.83E-06	1.18E-06	8.96E-01	7.98E+05	3.69E+05	3.51E+09	7.52E+05	4.59E+05	2.27E+06	1.97E-10
Fr-221	-	1.11E-07	1.69E-11	7.50E-08	1.07E-07	2.66E-08	9.19E-01	7.59E+04	2.24E+06	1.47E+10	3.31E+06	2.32E+06	9.34E+06	1.26E-08
Fr-221+D	-	8.91E-07	1.18E-10	5.32E-07	8.06E-07	1.90E-07	9.72E-01	7.59E+04	2.64E+05	1.99E+09	4.42E+05	2.91E+05	1.24E+06	1.49E-09
Fr-222	F	1.14E-08	2.36E-12	8.01E-09	1.08E-08	1.26E-08	9.27E-01	2.53E+04	7.20E+06	3.48E+10	1.02E+07	7.60E+06	6.52E+06	1.23E-07
Fr-223	F	1.40E-07	2.58E-11	9.95E-08	1.33E-07	4.94E-08	9.61E-01	1.67E+04	3.74E+05	2.03E+09	5.26E+05	3.93E+05	1.06E+06	9.68E-09
Ga-65	M	5.05E-06	6.72E-10	3.00E-06	4.58E-06	1.06E-06	8.65E-01	2.40E+04	1.65E+04	1.24E+08	2.78E+04	1.82E+04	7.86E+04	8.69E-11
Ga-66	M	1.26E-05	1.34E-09	6.24E-06	1.02E-05	2.07E-06	8.43E-01	6.46E+02	1.83E+02	1.72E+06	3.69E+02	2.26E+02	1.11E+03	3.63E-11
Ga-67	M	5.36E-07	8.35E-11	3.62E-07	5.14E-07	1.32E-07	9.15E-01	7.76E+01	4.76E+02	3.05E+06	7.05E+02	4.96E+02	1.93E+03	7.98E-10

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
Ga-68	M	4.17E-06	5.49E-10	2.48E-06	3.78E-06	8.68E-07	8.80E-01	5.36E+03	4.39E+03	3.34E+07	7.38E+03	4.85E+03	2.11E+04	1.08E-10
Ga-70	M	4.39E-08	6.05E-12	2.55E-08	3.87E-08	1.76E-08	8.64E-01	1.72E+04	1.37E+06	9.91E+09	2.35E+06	1.55E+06	3.41E+06	1.08E-08
Ga-72	M	1.37E-05	1.51E-09	6.94E-06	1.12E-05	2.31E-06	8.71E-01	4.31E+02	1.09E+02	9.85E+05	2.14E+02	1.33E+02	6.44E+02	3.52E-11
Ga-73	M	1.25E-06	1.76E-10	7.88E-07	1.17E-06	2.80E-07	9.29E-01	1.24E+03	3.20E+03	2.28E+07	5.08E+03	3.42E+03	1.43E+04	3.67E-10
Gd-145	M	1.13E-05	1.25E-09	5.76E-06	9.31E-06	1.93E-06	8.14E-01	1.59E+04	5.20E+03	4.70E+07	1.02E+04	6.32E+03	3.05E+04	9.20E-11
Gd-146	M	5.56E-07	1.10E-10	4.25E-07	5.50E-07	2.00E-07	9.43E-01	5.24E+00	3.01E+01	1.52E+05	3.93E+01	3.04E+01	8.35E+01	1.63E-09
Gd-147	M	5.88E-06	7.50E-10	3.38E-06	5.21E-06	1.18E-06	9.11E-01	1.59E+02	8.95E+01	7.02E+05	1.56E+02	1.01E+02	4.46E+02	1.60E-10
Gd-148	F	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.45E-03	-	-	-	-	-	-
Gd-149	M	1.59E-06	2.24E-10	9.80E-07	1.46E-06	3.64E-07	8.92E-01	2.69E+01	5.71E+01	4.05E+05	9.26E+01	6.22E+01	2.49E+02	6.13E-10
Gd-151	M	1.20E-07	2.41E-11	8.74E-08	1.16E-07	4.89E-08	9.30E-01	2.11E+00	5.68E+01	2.83E+05	7.80E+01	5.88E+01	1.39E+02	7.90E-09
Gd-152	F	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.42E-15	-	-	-	-	-	-
Gd-153	M	1.62E-07	3.97E-11	1.35E-07	1.62E-07	8.08E-08	9.45E-01	1.05E+00	2.05E+01	8.38E+04	2.47E+01	2.05E+01	4.12E+01	5.83E-09
Gd-159	M	1.74E-07	2.59E-11	1.11E-07	1.62E-07	4.56E-08	9.00E-01	3.27E+02	6.28E+03	4.22E+07	9.85E+03	6.75E+03	2.40E+04	5.93E-09
Ge-66	M	2.86E-06	3.84E-10	1.73E-06	2.60E-06	6.06E-07	9.15E-01	2.67E+03	3.07E+03	2.29E+07	5.08E+03	3.38E+03	1.45E+04	1.47E-10
Ge-67	M	6.24E-06	8.07E-10	3.64E-06	5.58E-06	1.27E-06	8.43E-01	1.95E+04	1.11E+04	8.61E+07	1.91E+04	1.25E+04	5.47E+04	7.44E-11
Ge-68	M	4.70E-13	2.93E-16	4.70E-13	4.70E-13	1.68E-11	1.00E+00	8.78E-01	5.62E+06	9.02E+09	5.62E+06	5.62E+06	1.57E+05	8.45E-04
Ge-68+D	M	4.17E-06	5.49E-10	2.48E-06	3.78E-06	8.68E-07	8.80E-01	8.78E-01	7.20E-01	5.47E+03	1.21E+00	7.94E-01	3.46E+00	1.08E-10
Ge-69	M	4.02E-06	4.98E-10	2.25E-06	3.53E-06	7.77E-07	8.46E-01	1.55E+02	1.38E+02	1.11E+06	2.46E+02	1.57E+02	7.12E+02	1.18E-10
Ge-71	M	4.74E-13	2.97E-16	4.74E-13	4.74E-13	1.71E-11	1.00E+00	2.14E+01	1.36E+08	2.17E+11	1.36E+08	1.36E+08	3.77E+06	8.75E-04
Ge-75	M	1.38E-07	2.00E-11	8.90E-08	1.31E-07	3.55E-08	9.09E-01	4.40E+03	1.06E+05	7.28E+08	1.64E+05	1.11E+05	4.10E+05	3.49E-09
Ge-77	M	4.82E-06	6.18E-10	2.80E-06	4.31E-06	9.69E-07	8.98E-01	5.37E+02	3.73E+02	2.91E+06	6.43E+02	4.18E+02	1.86E+03	1.04E-10
Ge-78	M	1.10E-06	1.58E-10	7.10E-07	1.05E-06	2.46E-07	9.09E-01	4.19E+03	1.26E+04	8.77E+07	1.95E+04	1.32E+04	5.63E+04	4.55E-10
H-3	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.61E-02	-	-	-	-	-	-
Hf-170	M	2.04E-06	2.94E-10	1.27E-06	1.88E-06	4.77E-07	9.49E-01	3.79E+02	5.89E+02	4.09E+06	9.47E+02	6.39E+02	2.52E+03	5.13E-10
Hf-172	F	1.62E-07	4.38E-11	1.41E-07	1.62E-07	8.77E-08	9.47E-01	3.71E-01	7.27E+00	2.69E+04	8.35E+00	7.27E+00	1.34E+01	6.55E-09
Hf-173	M	1.34E-06	2.14E-10	9.04E-07	1.27E-06	3.47E-07	9.13E-01	2.53E+02	6.22E+02	3.90E+06	9.22E+02	6.56E+02	2.40E+03	8.26E-10
Hf-175	M	1.35E-06	2.00E-10	8.68E-07	1.27E-06	3.21E-07	9.03E-01	3.61E+00	8.92E+00	6.02E+04	1.39E+01	9.48E+00	3.75E+01	8.38E-10
Hf-177m	M	8.58E-06	1.25E-09	5.51E-06	8.08E-06	1.97E-06	9.20E-01	7.09E+03	2.70E+03	1.85E+07	4.21E+03	2.87E+03	1.18E+04	1.31E-10
Hf-178m	F	9.58E-06	1.33E-09	5.92E-06	8.85E-06	2.09E-06	8.88E-01	2.24E-02	1.62E-02	1.17E+02	2.62E-02	1.75E-02	7.42E-02	2.50E-10
Hf-179m	M	3.42E-06	4.95E-10	2.18E-06	3.20E-06	7.88E-07	8.96E-01	1.01E+01	9.89E+00	6.84E+04	1.55E+01	1.06E+01	4.29E+01	3.41E-10
Hf-180m	M	3.94E-06	5.61E-10	2.48E-06	3.67E-06	8.88E-07	9.02E-01	1.10E+03	9.34E+02	6.56E+06	1.48E+03	1.00E+03	4.15E+03	2.96E-10
Hf-181	M	2.24E-06	3.12E-10	1.38E-06	2.07E-06	4.92E-07	8.93E-01	5.97E+00	8.97E+00	6.44E+04	1.46E+01	9.71E+00	4.09E+01	5.28E-10
Hf-182	F	9.10E-07	1.33E-10	5.93E-07	8.65E-07	2.09E-07	9.11E-01	7.70E-08	1.21E-01	8.28E+02	1.86E-01	1.27E-01	5.27E-01	5.55E-04
Hf-182+D	F	6.95E-06	8.55E-10	3.85E-06	6.02E-06	1.34E-06	9.11E-01	7.70E-08	1.58E-02	1.29E+02	2.86E-02	1.83E-02	8.22E-02	7.27E-05
Hf-182m	M	3.83E-06	5.20E-10	2.31E-06	3.48E-06	8.22E-07	9.42E-01	5.92E+03	4.94E+03	3.64E+07	8.19E+03	5.44E+03	2.30E+04	2.95E-10
Hf-183	M	3.31E-06	4.25E-10	1.90E-06	2.93E-06	6.74E-07	8.66E-01	5.69E+03	5.97E+03	4.65E+07	1.04E+04	6.75E+03	2.93E+04	3.73E-10
Hf-184	M	8.64E-07	1.32E-10	5.76E-07	8.23E-07	2.15E-07	9.17E-01	1.47E+03	5.60E+03	3.66E+07	8.39E+03	5.87E+03	2.25E+04	1.36E-09
Hg-193	M	5.55E-07	9.86E-11	3.98E-07	5.35E-07	1.65E-07	9.38E-01	1.73E+03	1.00E+04	5.64E+07	1.40E+04	1.04E+04	3.37E+04	2.16E-09
Hg-193m	M	4.54E-06	5.79E-10	2.60E-06	4.01E-06	9.09E-07	9.65E-01	5.47E+02	3.76E+02	2.95E+06	6.56E+02	4.25E+02	1.88E+03	2.57E-10
Hg-194	M	5.05E-12	3.15E-15	5.05E-12	5.05E-12	1.19E-10	1.00E+00	2.67E-03	2.07E+04	3.31E+07	2.07E+04	2.07E+04	8.77E+02	2.92E-03
Hg-194+D	M	4.93E-06	5.89E-10	2.67E-06	4.22E-06	9.17E-07	9.55E-01	2.67E-03	2.22E-02	1.86E+02	4.09E-02	2.59E-02	1.19E-01	3.13E-09
Hg-195	M	7.35E-07	1.05E-10	4.47E-07	6.59E-07	1.72E-07	9.51E-01	6.13E+02	2.64E+03	1.85E+07	4.34E+03	2.94E+03	1.13E+04	1.63E-09
Hg-195m	M	7.69E-07	1.12E-10	4.88E-07	7.14E-07	1.80E-07	9.98E-01	1.46E+02	5.72E+02	3.93E+06	9.02E+02	6.16E+02	2.44E+03	1.48E-09
Hg-197	M	1.14E-07	2.90E-11	1.00E-07	1.14E-07	5.26E-08	9.65E-01	9.47E+01	2.59E+03	1.02E+07	2.95E+03	2.59E+03	5.61E+03	1.05E-08
Hg-197m	M	2.50E-07	4.58E-11	1.86E-07	2.45E-07	7.51E-08	9.69E-01	2.55E+02	3.17E+03	1.73E+07	4.26E+03	3.23E+03	1.05E+04	4.75E-09
Hg-199m	M	5.77E-07	9.60E-11	4.03E-07	5.57E-07	1.55E-07	9.32E-01	8.55E+03	4.78E+04	2.88E+08	6.85E+04	4.96E+04	1.78E+05	2.16E-09
Hg-203	M	9.22E-07	1.33E-10	5.96E-07	8.75E-07	2.09E-07	9.11E-01	5.43E+00	1.94E+01	1.35E+05	3.01E+01	2.05E+01	8.58E+01	1.41E-09
Ho-155	M	1.52E-06	2.11E-10	9.27E-07	1.39E-06	3.43E-07	9.26E-01	7.59E+03	1.62E+04	1.17E+08	2.66E+04	1.77E+04	7.19E+04	6.43E-10
Ho-157	M	1.85E-06	2.59E-10	1.13E-06	1.68E-06	4.26E-07	9.23E-01	2.89E+04	5.09E+04	3.64E+08	8.34E+04	5.61E+04	2.21E+05	5.37E-10
Ho-159	M	1.16E-06	1.83E-10	7.65E-07	1.09E-06	3.07E-07	9.27E-01	1.10E+04	3.09E+04	1.96E+08	4.68E+04	3.29E+04	1.17E+05	8.63E-10
Ho-161	M	5.52E-08	1.80E-11	5.03E-08	5.51E-08	4.34E-08	9.57E-01	2.43E+03	1.38E+05	4.24E+08	1.52E+05	1.39E+05	1.76E+05	1.78E-08
Ho-162	M	6.03E-07	8.26E-11	3.48E-07	5.27E-07	1.41E-07	8.79E-01	2.43E+04	1.38E+05	1.01E+09	2.39E+05	1.58E+05	5.90E+05	1.78E-09
Ho-162m	M	2.46E-06	3.11E-10	1.38E-06	2.14E-06	4.96E-07	9.24E-01	5.36E+03	7.09E+03	5.61E+07	1.26E+04	8.15E+03	3.52E+04	4.16E-10
Ho-164	M	2.78E-08	9.47E-12	2.60E-08	2.77E-08	2.30E-08	9.50E-01	1.26E+04	1.43E+06	4.20E+09	1.53E+06	1.44E+06	1.73E+06	3.63E-08
Ho-164m	M	3.63E-08	1.37E-11	3.54E-08	3.63E-08	3.33E-08	9.57E-01	9.71E+03	8.41E+05	2.23E+09	8.63E+05	8.41E+05	9.17E+05	2.76E-08
Ho-166	M	1.18E-07	1.64E-11	6.76E-08	1.01E-07	3.52E-08	8.97E-01	2.27E+02	6.44E+03	4.63E+07	1.12E+04	7.52E+03	2.16E+04	9.16E-09
Ho-166m	M	7.70E-06	9.93E-10	4.46E-06	6.88E-06	1.55E-06	9.03E-01	5.78E-04	1.45E-02	1.13E+02	2.51E-02	1.63E-02	7.23E-02	8.12E-09
Ho-167	M	1.45E-06	2.04E-10	9.15E-07	1.35E-06	3.24E-07	9.00E-01	1.96E+03	4.52E+03	3.21E+07	7.15E+03	4.85E+03	2.02E+04	7.47E-10
I-120	F	1.33E-05	1.53E-09	7.00E-06	1.12E-05	2.37E-06	8.78E-01	4.50E+03	1.16E+03	1.01E+07	2.20E+03	1.38E+03	6.50E+03	6.00E-11
I-120m	F	2.55E-05	2.98E-09	1.37E-05	2.17E-05	4.64E-06	8.57E-01	6.87E+03	9.46E+02	8.10E+06	1.76E+03	1.11E+03	5.20E+03	3.21E-11
I-121	F	1.64E-06	2.28E-10	1.02E-06	1.52E-06	3.64E-07	8.92E-01	2.86E+03	5.89E+03	4.24E+07	9.47E+03	6.35E+03	2.65E+04	4.83E-10
I-122	-	4.17E-06	5.47E-10	2.46E-06	3.77E-06	8.68E-07	8.75E-01	1.01E+05	8.30E+04	6.33E+08	1.41E+05	9.18E+04	3.99E+05	1.95E-10

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
I-123	F	5.10E-07	8.27E-11	3.55E-07	4.95E-07	1.39E-07	9.56E-01	4.60E+02	2.84E+03	1.75E+07	4.08E+03	2.92E+03	1.04E+04	1.47E-09
I-124	F	5.10E-06	6.14E-10	2.80E-06	4.42E-06	9.62E-07	8.75E-01	6.05E+01	4.08E+01	3.39E+05	7.43E+01	4.71E+01	2.16E+02	1.62E-10
I-125	F	7.24E-09	4.19E-12	7.24E-09	7.24E-09	2.27E-08	9.86E-01	4.21E+00	1.77E+03	3.06E+06	1.77E+03	1.77E+03	5.65E+02	1.02E-07
I-126	F	1.96E-06	2.56E-10	1.15E-06	1.78E-06	4.05E-07	8.81E-01	1.94E+01	3.39E+01	2.59E+05	5.77E+01	3.73E+01	1.64E+02	4.26E-10
I-128	F	3.74E-07	5.07E-11	2.25E-07	3.42E-07	8.91E-08	8.90E-01	1.46E+04	1.32E+05	9.72E+08	2.19E+05	1.44E+05	5.53E+05	2.25E-09
I-129	F	6.10E-09	3.28E-12	6.10E-09	6.10E-09	1.47E-08	9.80E-01	4.41E-08	1.68E+01	3.12E+04	1.68E+01	1.68E+01	6.96E+00	9.51E-02
I-130	F	9.67E-06	1.23E-09	5.56E-06	8.62E-06	1.92E-06	8.72E-01	4.91E+02	1.75E+02	1.38E+06	3.05E+02	1.97E+02	8.83E+02	9.00E-11
I-131	F	1.59E-06	2.17E-10	9.79E-07	1.47E-06	3.41E-07	8.91E-01	3.15E+01	6.68E+01	4.90E+05	1.09E+02	7.23E+01	3.12E+02	5.40E-10
I-132	F	1.06E-05	1.31E-09	5.92E-06	9.29E-06	2.04E-06	8.92E-01	2.64E+03	8.40E+02	6.80E+06	1.50E+03	9.58E+02	4.36E+03	8.15E-11
I-132m	F	1.40E-06	1.80E-10	8.09E-07	1.25E-06	2.86E-07	8.74E-01	4.36E+03	1.07E+04	8.33E+07	1.85E+04	1.20E+04	5.24E+04	6.30E-10
I-133	F	2.72E-06	3.49E-10	1.58E-06	2.43E-06	5.50E-07	8.81E-01	2.92E+02	3.66E+02	2.86E+06	6.31E+02	4.10E+02	1.81E+03	3.24E-10
I-134	F	1.24E-05	1.50E-09	6.81E-06	1.08E-05	2.34E-06	8.79E-01	6.92E+03	1.91E+03	1.58E+07	3.48E+03	2.19E+03	1.01E+04	7.18E-11
I-135	F	7.84E-06	8.84E-10	4.06E-06	6.55E-06	1.37E-06	9.00E-01	9.18E+02	3.92E+02	3.47E+06	7.56E+02	4.69E+02	2.24E+03	1.12E-10
In-109	M	2.90E-06	3.71E-10	1.67E-06	2.57E-06	5.84E-07	8.99E-01	1.45E+03	1.67E+03	1.30E+07	2.90E+03	1.88E+03	8.28E+03	2.44E-10
In-110	M	1.41E-05	1.74E-09	7.88E-06	1.24E-05	2.71E-06	8.71E-01	1.24E+03	3.04E+02	2.46E+06	5.43E+02	3.45E+02	1.58E+03	5.23E-11
In-110m	M	7.14E-06	8.84E-10	4.01E-06	6.27E-06	1.39E-06	8.74E-01	5.27E+03	2.54E+03	2.05E+07	4.53E+03	2.89E+03	1.31E+04	1.03E-10
In-111	M	1.42E-06	2.16E-10	9.55E-07	1.37E-06	3.42E-07	9.52E-01	8.94E+01	1.99E+02	1.31E+06	2.96E+02	2.06E+02	8.26E+02	4.79E-10
In-112	M	1.15E-06	1.51E-10	6.81E-07	1.04E-06	2.41E-07	9.31E-01	2.53E+04	7.11E+04	5.41E+08	1.20E+05	7.86E+04	3.39E+05	6.11E-10
In-113m	M	1.05E-06	1.45E-10	6.49E-07	9.78E-07	2.28E-07	9.32E-01	3.66E+03	1.13E+04	8.15E+07	1.82E+04	1.21E+04	5.18E+04	6.74E-10
In-114	-	1.35E-08	1.55E-12	7.10E-09	1.14E-08	2.46E-09	8.69E-01	3.04E+05	7.80E+07	6.79E+11	1.48E+08	9.23E+07	4.28E+08	5.67E-08
In-114m	M	3.57E-07	4.89E-11	2.18E-07	3.28E-07	7.95E-08	9.46E-01	5.11E+00	4.55E+01	3.32E+05	7.45E+01	4.95E+01	2.04E+02	1.97E-09
In-115	F	2.70E-10	6.11E-14	2.16E-10	2.67E-10	1.54E-10	9.27E-01	1.36E-16	3.98E+02	1.76E+06	4.97E+02	4.02E+02	6.97E+02	6.53E+08
In-115m	M	6.27E-07	8.76E-11	3.94E-07	5.88E-07	1.40E-07	9.17E-01	1.35E+03	7.08E+03	5.07E+07	1.13E+04	7.55E+03	3.17E+04	1.17E-09
In-116m	M	1.23E-05	1.39E-09	6.39E-06	1.03E-05	2.15E-06	8.92E-01	6.73E+03	1.84E+03	1.63E+07	3.55E+03	2.20E+03	1.06E+04	6.17E-11
In-117	M	2.90E-06	3.92E-10	1.76E-06	2.65E-06	6.17E-07	8.97E-01	8.32E+03	9.62E+03	7.12E+07	1.58E+04	1.05E+04	4.52E+04	2.63E-10
In-117m	M	3.35E-07	4.94E-11	2.18E-07	3.19E-07	8.34E-08	9.23E-01	3.13E+03	3.04E+04	2.06E+08	4.68E+04	3.19E+04	1.22E+05	2.21E-09
In-119	-	3.54E-06	4.42E-10	2.00E-06	3.12E-06	6.97E-07	8.71E-01	1.52E+05	1.48E+05	1.19E+09	2.62E+05	1.68E+05	7.52E+05	2.25E-10
In-119m	M	5.63E-08	8.94E-12	3.49E-08	5.12E-08	2.69E-08	9.30E-01	2.02E+04	1.16E+06	7.32E+09	1.88E+06	1.28E+06	2.43E+06	1.33E-08
Ir-182	S	5.85E-06	7.60E-10	3.41E-06	5.22E-06	1.20E-06	9.28E-01	2.43E+04	1.35E+04	1.04E+08	2.31E+04	1.51E+04	6.56E+04	1.96E-10
Ir-184	S	8.67E-06	1.06E-09	4.82E-06	7.52E-06	1.66E-06	9.44E-01	2.01E+03	7.39E+02	6.04E+06	1.33E+03	8.52E+02	3.86E+03	1.31E-10
Ir-185	S	2.69E-06	3.18E-10	1.42E-06	2.24E-06	5.01E-07	9.53E-01	4.34E+02	5.09E+02	4.31E+06	9.64E+02	6.11E+02	2.73E+03	4.21E-10
Ir-186	S	7.41E-06	9.11E-10	4.12E-06	6.42E-06	1.42E-06	9.42E-01	3.84E+02	1.66E+02	1.35E+06	2.98E+02	1.91E+02	8.64E+02	1.56E-10
Ir-186m	S	4.22E-06	5.38E-10	2.41E-06	3.71E-06	8.48E-07	8.78E-01	3.47E+03	2.82E+03	2.21E+07	4.93E+03	3.20E+03	1.40E+04	2.93E-10
Ir-187	S	1.42E-06	1.95E-10	8.49E-07	1.27E-06	3.14E-07	9.58E-01	5.78E+02	1.28E+03	9.31E+06	2.14E+03	1.43E+03	5.78E+03	8.03E-10
Ir-188	S	7.69E-06	8.65E-10	3.97E-06	6.38E-06	1.34E-06	9.08E-01	1.46E+02	6.30E+01	5.60E+05	1.22E+02	7.60E+01	3.62E+02	1.57E-10
Ir-189	S	1.69E-07	3.56E-11	1.31E-07	1.66E-07	6.37E-08	9.54E-01	1.90E+01	3.55E+02	1.68E+06	4.58E+02	3.61E+02	9.42E+02	6.84E-09
Ir-190	S	5.99E-06	8.11E-10	3.62E-06	5.45E-06	1.27E-06	9.28E-01	2.09E+01	1.13E+01	8.36E+04	1.87E+01	1.24E+01	5.34E+01	2.00E-10
Ir-190m	S	8.69E-13	5.42E-16	8.69E-13	8.69E-13	2.55E-11	1.00E+00	5.06E+03	1.75E+10	2.81E+13	1.75E+10	1.75E+10	5.97E+08	1.28E-03
Ir-190n	S	6.48E-06	8.77E-10	3.92E-06	5.93E-06	1.38E-06	9.55E-01	1.96E+03	9.52E+02	7.04E+06	1.57E+03	1.04E+03	4.47E+03	1.79E-10
Ir-191m	-	1.58E-07	3.35E-11	1.26E-07	1.57E-07	5.79E-08	9.45E-01	4.42E+06	8.91E+07	4.20E+11	1.12E+08	8.97E+07	2.43E+08	7.47E-09
Ir-192	S	3.40E-06	4.65E-10	2.09E-06	3.14E-06	7.29E-07	9.57E-01	3.42E+00	3.16E+00	2.31E+04	5.14E+00	3.42E+00	1.47E+01	3.45E-10
Ir-192m	S	5.40E-07	8.76E-11	3.81E-07	5.29E-07	1.37E-07	9.25E-01	2.88E-03	2.10E-01	1.29E+03	2.97E-01	2.14E-01	8.26E-01	2.72E-08
Ir-194	S	4.09E-07	5.42E-11	2.42E-07	3.69E-07	9.40E-08	9.02E-01	3.17E+02	2.59E+03	1.95E+07	4.37E+03	2.87E+03	1.12E+04	3.07E-09
Ir-194m	S	1.01E-05	1.34E-09	6.03E-06	9.19E-06	2.09E-06	8.81E-01	1.48E+00	5.00E-01	3.77E+03	8.38E-01	5.50E-01	2.42E+00	1.27E-10
Ir-195	S	1.12E-07	2.56E-11	9.24E-08	1.11E-07	4.82E-08	9.54E-01	2.43E+03	6.84E+04	2.99E+08	8.29E+04	6.90E+04	1.59E+05	1.07E-08
Ir-195m	S	1.58E-06	2.28E-10	9.90E-07	1.46E-06	3.64E-07	9.98E-01	1.60E+03	3.05E+03	2.11E+07	4.87E+03	3.30E+03	1.32E+04	7.22E-10
K-38	-	1.61E-05	1.75E-09	8.15E-06	1.32E-05	2.71E-06	8.44E-01	4.77E+04	1.06E+04	9.72E+07	2.09E+04	1.29E+04	6.27E+04	1.63E-11
K-40	F	7.98E-07	8.83E-11	4.08E-07	6.61E-07	1.42E-07	8.26E-01	5.41E-10	1.52E-01	1.38E+03	2.98E-01	1.84E-01	8.55E-01	2.18E-02
K-42	F	1.46E-06	1.62E-10	7.44E-07	1.20E-06	2.63E-07	8.23E-01	4.91E+02	1.23E+03	1.11E+07	2.41E+03	1.50E+03	6.83E+03	2.04E-10
K-43	F	4.23E-06	5.57E-10	2.51E-06	3.84E-06	8.72E-07	8.78E-01	2.69E+02	2.18E+02	1.65E+06	3.67E+02	2.40E+02	1.06E+03	6.76E-11
K-44	F	1.19E-05	1.24E-09	5.77E-06	9.50E-06	1.90E-06	7.99E-01	1.65E+04	5.21E+03	5.00E+07	1.07E+04	6.52E+03	3.26E+04	2.70E-11
K-45	F	9.53E-06	1.02E-09	4.77E-06	7.76E-06	1.58E-06	8.33E-01	1.82E+04	6.90E+03	6.45E+07	1.38E+04	8.48E+03	4.16E+04	3.31E-11
Kr-74	-	4.91E-06	6.66E-10	2.98E-06	4.50E-06	1.05E-06	9.23E-01	3.17E+04	2.10E+04	1.55E+08	3.46E+04	2.29E+04	9.83E+04	9.53E-11
Kr-76	-	1.73E-06	2.41E-10	1.08E-06	1.61E-06	3.78E-07	9.71E-01	4.10E+02	7.35E+02	5.27E+06	1.18E+03	7.89E+02	3.36E+03	2.64E-10
Kr-77	-	4.22E-06	5.77E-10	2.58E-06	3.87E-06	9.15E-07	8.94E-01	4.88E+03	3.89E+03	2.84E+07	6.36E+03	4.24E+03	1.79E+04	1.19E-10
Kr-79	-	1.08E-06	1.44E-10	6.48E-07	9.85E-07	2.24E-07	8.93E-01	1.73E+02	5.40E+02	4.05E+06	9.01E+02	5.93E+02	2.61E+03	4.78E-10
Kr-81	-	2.18E-08	3.13E-12	1.41E-08	2.08E-08	5.30E-09	9.99E-01	3.30E-06	4.61E+00	3.21E+04	7.12E+00	4.83E+00	1.89E+01	2.19E-04
Kr-81m	-	4.60E-07	7.10E-11	3.14E-07	4.46E-07	1.11E-07	9.68E-01	1.68E+06	1.14E+07	7.36E+10	1.66E+07	1.17E+07	4.71E+07	1.06E-09
Kr-83m	-	1.34E-11	8.09E-15	1.34E-11	1.34E-11	2.06E-10	1.00E+00	3.32E+03	7.45E+08	1.23E+12	7.45E+08	7.45E+08	4.85E+07	3.62E-05
Kr-85	-	1.05E-08	1.46E-12	6.41E-09	9.65E-09	3.26E-09	8.84E-01	6.46E-02	2.45E+01	1.76E+05	4.01E+01	2.66E+01	7.88E+01	6.24E-08
Kr-85m	-	5.47E-07	8.64E-11	3.78E-07	5.30E-07	1.37E-07	9.28E-01	1.36E+03	8.03E+03	5.09E+07	1.16E+04	8.29E+03	3.21E+04	9.78E-10
Kr-87	-	4.01E-06	4.43E-10	2.04E-06	3.31E-06	6.91E-07	8.49E-01	4.77E+03	4.22E+03	3.82E+07	8.29E+03	5.11E+03	2.45E+04	1.49E-10

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
Kr-88	-	1.02E-05	1.06E-09	4.95E-06	8.15E-06	1.62E-06	9.16E-01	2.14E+03	6.88E+02	6.62E+06	1.42E+03	8.62E+02	4.33E+03	5.50E-11
La-131	M	2.76E-06	3.73E-10	1.66E-06	2.51E-06	5.95E-07	8.96E-01	6.17E+03	7.51E+03	5.56E+07	1.25E+04	8.26E+03	3.48E+04	3.09E-10
La-132	M	9.52E-06	1.12E-09	5.14E-06	8.13E-06	1.75E-06	8.79E-01	1.26E+03	4.55E+02	3.87E+06	8.42E+02	5.32E+02	2.47E+03	9.21E-11
La-134	-	3.05E-06	3.99E-10	1.80E-06	2.76E-06	6.38E-07	8.90E-01	5.46E+04	6.05E+04	4.63E+08	1.03E+05	6.69E+04	2.89E+05	2.88E-10
La-135	M	5.21E-08	9.67E-12	3.38E-08	4.79E-08	2.50E-08	9.43E-01	3.11E+02	1.91E+04	1.03E+08	2.94E+04	2.07E+04	3.97E+04	1.60E-08
La-137	F	6.75E-09	3.59E-12	6.74E-09	6.75E-09	1.50E-08	9.78E-01	1.16E-05	1.52E+01	2.86E+04	1.52E+01	1.52E+01	6.84E+00	3.50E-04
La-138	F	6.07E-06	6.89E-10	3.17E-06	5.09E-06	1.07E-06	8.42E-01	5.13E-12	1.96E-02	1.73E+02	3.76E-02	2.34E-02	1.11E-01	1.02E+00
La-140	M	1.15E-05	1.30E-09	5.97E-06	9.60E-06	2.00E-06	8.68E-01	1.51E+02	4.54E+01	4.02E+05	8.75E+01	5.44E+01	2.61E+02	8.19E-11
La-141	M	2.37E-07	2.79E-11	1.25E-07	1.99E-07	5.42E-08	8.29E-01	1.54E+03	2.37E+04	2.01E+08	4.49E+04	2.82E+04	1.03E+05	4.19E-09
La-142	M	1.44E-05	1.50E-09	6.97E-06	1.15E-05	2.29E-06	8.80E-01	3.94E+03	9.35E+02	8.98E+06	1.93E+03	1.17E+03	5.88E+03	6.54E-11
La-143	M	5.12E-07	5.97E-11	2.67E-07	4.27E-07	1.05E-07	8.53E-01	2.56E+04	1.76E+05	1.51E+09	3.38E+05	2.11E+05	8.60E+05	1.91E-09
Lu-169	S	4.73E-06	5.70E-10	2.56E-06	4.04E-06	8.98E-07	9.22E-01	1.78E+02	1.23E+02	1.02E+06	2.27E+02	1.44E+02	6.48E+02	2.26E-10
Lu-170	S	1.26E-05	1.34E-09	6.23E-06	1.02E-05	2.08E-06	9.41E-01	1.26E+02	3.21E+01	3.02E+05	6.49E+01	3.96E+01	1.94E+02	8.37E-11
Lu-171	S	2.90E-06	3.81E-10	1.67E-06	2.57E-06	6.11E-07	9.41E-01	3.08E+01	3.39E+01	2.58E+05	5.89E+01	3.83E+01	1.61E+02	3.66E-10
Lu-172	S	8.70E-06	1.06E-09	4.78E-06	7.51E-06	1.66E-06	9.20E-01	3.78E+01	1.42E+01	1.16E+05	2.58E+01	1.64E+01	7.44E+01	1.25E-10
Lu-173	S	2.92E-07	5.70E-11	2.11E-07	2.79E-07	1.05E-07	9.07E-01	5.06E-01	5.75E+00	2.94E+04	7.95E+00	6.01E+00	1.60E+01	3.81E-09
Lu-174	S	4.26E-07	6.02E-11	2.46E-07	3.68E-07	1.03E-07	9.17E-01	2.09E-01	1.62E+00	1.14E+04	2.80E+00	1.87E+00	6.68E+00	2.61E-09
Lu-174m	S	9.88E-08	2.36E-11	7.71E-08	9.38E-08	4.74E-08	9.48E-01	1.78E+00	5.72E+01	2.40E+05	7.33E+01	6.03E+01	1.19E+02	1.08E-08
Lu-176	S	1.83E-06	2.71E-10	1.20E-06	1.75E-06	4.27E-07	9.12E-01	1.93E-11	6.01E-02	4.06E+02	9.16E-02	6.28E-02	2.58E-01	1.07E+00
Lu-176m	S	2.78E-08	6.74E-12	2.35E-08	2.77E-08	1.69E-08	9.47E-01	1.65E+03	1.89E+05	7.78E+08	2.23E+05	1.89E+05	3.10E+05	3.90E-08
Lu-177	S	1.14E-07	1.86E-11	7.94E-08	1.11E-07	2.98E-08	9.23E-01	3.77E+01	1.08E+03	6.61E+06	1.55E+03	1.11E+03	4.12E+03	9.82E-09
Lu-177m	S	3.63E-06	5.45E-10	2.38E-06	3.46E-06	8.69E-07	9.41E-01	1.57E+00	1.38E+00	9.22E+03	2.11E+00	1.45E+00	5.78E+00	3.03E-10
Lu-178	S	6.76E-07	7.94E-11	3.59E-07	5.70E-07	1.33E-07	8.36E-01	1.28E+04	6.83E+04	5.81E+08	1.29E+05	8.10E+04	3.47E+05	1.84E-09
Lu-178m	S	4.26E-06	6.17E-10	2.73E-06	4.01E-06	9.79E-07	9.04E-01	1.60E+04	1.25E+04	8.66E+07	1.96E+04	1.33E+04	5.46E+04	2.70E-10
Lu-179	S	1.19E-07	1.80E-11	7.87E-08	1.14E-07	3.34E-08	9.05E-01	1.32E+03	3.70E+04	2.44E+08	5.59E+04	3.86E+04	1.32E+05	9.70E-09
Md-257	M	3.62E-07	5.79E-11	2.49E-07	3.47E-07	9.36E-08	9.95E-01	1.17E+03	9.75E+03	6.10E+07	1.42E+04	1.02E+04	3.77E+04	4.17E-09
Md-258	M	1.31E-09	4.30E-13	1.18E-09	1.31E-09	2.24E-09	9.96E-01	4.60E+00	1.06E+04	3.23E+07	1.18E+04	1.06E+04	6.20E+03	1.15E-06
Mg-28	M	6.56E-06	7.65E-10	3.50E-06	5.58E-06	1.19E-06	8.72E-01	2.90E+02	1.53E+02	1.31E+06	2.86E+02	1.80E+02	8.42E+02	2.86E-11
Mn-51	M	4.37E-06	5.77E-10	2.59E-06	3.97E-06	9.15E-07	8.82E-01	7.88E+03	6.15E+03	4.66E+07	1.04E+04	6.77E+03	2.94E+04	7.73E-11
Mn-52	M	1.67E-05	1.96E-09	8.96E-06	1.42E-05	3.04E-06	8.36E-01	4.52E+01	9.75E+00	8.31E+04	1.82E+01	1.15E+01	5.36E+01	2.17E-11
Mn-52m	M	1.15E-05	1.37E-09	6.25E-06	9.89E-06	2.13E-06	8.48E-01	1.73E+04	5.33E+03	4.47E+07	9.80E+03	6.19E+03	2.88E+04	3.11E-11
Mn-53	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.87E-07	-	-	-	-	-	-
Mn-54	M	3.89E-06	4.79E-10	2.17E-06	3.41E-06	7.46E-07	8.58E-01	8.09E-01	7.30E-01	5.93E+03	1.31E+00	8.32E-01	3.80E+00	9.45E-11
Mn-56	M	8.44E-06	9.48E-10	4.37E-06	7.04E-06	1.47E-06	8.27E-01	2.35E+03	1.01E+03	9.04E+06	1.96E+03	1.22E+03	5.83E+03	4.68E-11
Mo-101	M	6.62E-06	7.70E-10	3.53E-06	5.62E-06	1.19E-06	9.17E-01	2.49E+04	1.23E+04	1.06E+08	2.32E+04	1.45E+04	6.87E+04	9.71E-11
Mo-90	M	3.41E-06	4.59E-10	2.06E-06	3.11E-06	7.21E-07	8.84E-01	1.07E+03	1.07E+03	7.94E+06	1.77E+03	1.17E+03	5.05E+03	1.74E-10
Mo-93	M	2.17E-10	1.37E-13	2.17E-10	2.17E-10	2.36E-09	1.00E+00	1.98E-04	4.64E+02	7.34E+05	4.64E+02	4.64E+02	4.26E+01	4.22E-04
Mo-93m	M	1.09E-05	1.26E-09	5.80E-06	9.26E-06	1.95E-06	8.61E-01	8.86E+02	2.84E+02	2.46E+06	5.34E+02	3.34E+02	1.59E+03	5.79E-11
Mo-99	M	6.65E-07	8.58E-11	3.85E-07	5.93E-07	1.38E-07	9.29E-01	9.20E+01	4.48E+02	3.47E+06	7.74E+02	5.02E+02	2.16E+03	9.36E-10
N-13	-	4.45E-06	5.88E-10	2.65E-06	4.05E-06	9.25E-07	8.83E-01	3.66E+04	2.80E+04	2.12E+08	4.70E+04	3.08E+04	1.35E+05	1.93E-11
Na-22	F	1.03E-05	1.25E-09	5.68E-06	8.95E-06	1.94E-06	8.61E-01	2.66E-01	9.04E-02	7.45E+02	1.64E-01	1.04E-01	4.80E-01	1.45E-11
Na-24	F	2.20E-05	2.21E-09	1.04E-05	1.73E-05	3.36E-06	8.06E-01	4.05E+02	6.87E+01	6.84E+05	1.45E+02	8.73E+01	4.50E+02	7.90E-12
Nb-88	M	1.89E-05	2.36E-09	1.07E-05	1.67E-05	3.69E-06	8.71E-01	2.55E+04	4.66E+03	3.73E+07	8.22E+03	5.27E+03	2.38E+04	3.12E-11
Nb-89	M	6.65E-06	7.83E-10	3.57E-06	5.66E-06	1.23E-06	8.85E-01	2.99E+03	1.53E+03	1.30E+07	2.84E+03	1.79E+03	8.25E+03	8.83E-11
Nb-89m	M	8.48E-06	1.11E-09	5.00E-06	7.67E-06	1.74E-06	8.90E-01	5.52E+03	2.20E+03	1.68E+07	3.73E+03	2.43E+03	1.07E+04	6.88E-11
Nb-90	M	2.13E-05	2.31E-09	1.07E-05	1.74E-05	3.56E-06	8.51E-01	4.16E+02	6.90E+01	6.36E+05	1.37E+02	8.45E+01	4.13E+02	2.90E-11
Nb-93m	M	3.83E-11	2.39E-14	3.83E-11	3.83E-11	4.15E-10	1.00E+00	5.10E-02	5.11E+03	8.19E+06	5.11E+03	5.11E+03	4.72E+02	1.81E-05
Nb-94	M	7.29E-06	9.05E-10	4.09E-06	6.40E-06	1.41E-06	8.61E-01	3.41E-05	1.60E-02	1.29E+02	2.85E-02	1.82E-02	8.27E-02	8.54E-08
Nb-95	M	3.53E-06	4.40E-10	1.99E-06	3.12E-06	6.87E-07	8.63E-01	7.20E+00	7.11E+00	5.70E+04	1.26E+01	8.04E+00	3.65E+01	1.82E-10
Nb-95m	M	2.32E-07	3.41E-11	1.53E-07	2.22E-07	5.47E-08	9.88E-01	7.01E+01	9.20E+02	6.26E+06	1.40E+03	9.62E+02	3.90E+03	2.42E-09
Nb-96	M	1.15E-05	1.41E-09	6.41E-06	1.01E-05	2.21E-06	8.66E-01	2.60E+02	7.85E+01	6.41E+05	1.41E+02	8.94E+01	4.09E+02	5.63E-11
Nb-97	M	2.97E-06	3.78E-10	1.71E-06	2.65E-06	5.96E-07	8.70E-01	5.05E+03	5.88E+03	4.62E+07	1.02E+04	6.59E+03	2.93E+04	2.19E-10
Nb-97m	-	3.34E-06	4.19E-10	1.89E-06	2.96E-06	6.54E-07	8.70E-01	3.64E+05	3.77E+05	3.01E+09	6.67E+05	4.26E+05	1.93E+06	1.95E-10
Nb-98	M	1.16E-05	1.38E-09	6.31E-06	9.97E-06	2.16E-06	8.40E-01	7.07E+03	2.18E+03	1.84E+07	4.01E+03	2.54E+03	1.17E+04	5.87E-11
Nd-136	S	1.01E-06	1.47E-10	6.30E-07	9.29E-07	2.49E-07	8.84E-01	7.19E+03	2.42E+04	1.67E+08	3.89E+04	2.63E+04	9.83E+04	8.89E-10
Nd-138	S	6.73E-08	1.35E-11	4.71E-08	6.41E-08	3.18E-08	9.45E-01	1.20E+03	5.70E+04	2.84E+08	8.14E+04	5.98E+04	1.21E+05	1.27E-08
Nd-139	S	1.72E-06	2.24E-10	1.00E-06	1.54E-06	3.61E-07	8.70E-01	1.23E+04	2.47E+04	1.89E+08	4.24E+04	2.75E+04	1.17E+05	5.42E-10
Nd-139m	S	7.14E-06	8.81E-10	3.97E-06	6.21E-06	1.38E-06	8.98E-01	1.10E+03	5.18E+02	4.20E+06	9.32E+02	5.96E+02	2.68E+03	1.27E-10
Nd-141	S	2.28E-07	3.22E-11	1.33E-07	2.01E-07	6.06E-08	9.42E-01	2.44E+03	3.42E+04	2.42E+08	5.86E+04	3.87E+04	1.29E+05	3.83E-09
Nd-141m	-	3.48E-06	4.36E-10	1.97E-06	3.07E-06	6.82E-07	8.65E-01	3.50E+05	3.50E+05	2.79E+09	6.18E+05	3.97E+05	1.79E+06	2.73E-10
Nd-147	S	4.87E-07	7.21E-11	3.07E-07	4.50E-07	1.21E-07	8.90E-01	2.30E+01	1.60E+02	1.08E+06	2.54E+02	1.73E+02	6.44E+02	1.98E-09
Nd-149	S	1.50E-06	2.13E-10	9.41E-07	1.39E-06	3.42E-07	9.27E-01	3.51E+03	7.59E+03	5.35E+07	1.21E+04	8.19E+03	3.33E+04	6.26E-10

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
Nd-151	S	4.10E-06	5.15E-10	2.31E-06	3.60E-06	8.12E-07	9.28E-01	2.93E+04	2.32E+04	1.84E+08	4.11E+04	2.64E+04	1.17E+05	2.32E-10
Ne-19	-	4.47E-06	5.91E-10	2.66E-06	4.06E-06	9.38E-07	8.83E-01	1.27E+06	9.67E+05	7.32E+09	1.63E+06	1.07E+06	4.61E+06	2.81E-11
Ni-56	M	7.74E-06	9.78E-10	4.42E-06	6.84E-06	1.52E-06	8.69E-01	4.15E+01	1.85E+01	1.47E+05	3.25E+01	2.10E+01	9.45E+01	4.86E-11
Ni-57	M	9.44E-06	1.07E-09	4.95E-06	7.94E-06	1.66E-06	8.29E-01	1.68E+02	6.47E+01	5.71E+05	1.23E+02	7.69E+01	3.68E+02	4.25E-11
Ni-59	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.24E-06	-	-	-	-	-	-
Ni-63	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.22E-03	-	-	-	-	-	-
Ni-65	M	2.74E-06	3.10E-10	1.42E-06	2.29E-06	4.85E-07	8.31E-01	2.41E+03	3.18E+03	2.81E+07	6.14E+03	3.81E+03	1.80E+04	1.67E-10
Ni-66	M	2.67E-11	8.04E-15	2.37E-11	2.67E-11	2.24E-11	9.27E-01	1.11E+02	1.35E+07	4.49E+10	1.52E+07	1.35E+07	1.61E+07	1.56E-05
Np-232	M	5.26E-06	6.75E-10	3.04E-06	4.67E-06	1.06E-06	9.16E-01	2.48E+04	1.55E+04	1.21E+08	2.68E+04	1.74E+04	7.68E+04	2.81E-10
Np-233	M	2.29E-07	4.32E-11	1.75E-07	2.27E-07	7.14E-08	9.51E-01	1.01E+04	1.39E+05	7.37E+08	1.82E+05	1.40E+05	4.46E+05	6.25E-09
Np-234	M	7.07E-06	7.95E-10	3.67E-06	5.89E-06	1.23E-06	9.66E-01	5.75E+01	2.53E+01	2.25E+05	4.88E+01	3.04E+01	1.46E+02	2.00E-10
Np-235	M	2.13E-09	4.88E-13	1.73E-09	2.13E-09	1.97E-09	1.00E+00	6.39E-01	9.02E+02	3.94E+06	1.11E+03	9.02E+02	9.75E+02	6.44E-07
Np-236	M	3.25E-07	6.00E-11	2.46E-07	3.22E-07	1.01E-07	9.99E-01	6.03E-06	3.09E-01	1.67E+03	4.08E-01	3.12E-01	9.94E-01	2.35E-05
Np-236m	M	1.34E-07	2.41E-11	9.85E-08	1.30E-07	3.98E-08	9.99E-01	2.70E+02	6.06E+03	3.37E+07	8.25E+03	6.25E+03	2.04E+04	1.03E-08
Np-237	M	5.36E-08	1.12E-11	4.27E-08	5.34E-08	2.17E-08	9.73E-01	3.24E-07	1.92E+00	9.20E+03	2.41E+00	1.93E+00	4.75E+00	2.73E-03
Np-237+D	M	7.96E-07	1.21E-10	5.27E-07	7.57E-07	1.96E-07	9.73E-01	3.24E-07	1.29E-01	8.52E+02	1.96E-01	1.36E-01	5.26E-01	1.84E-04
Np-238	M	2.62E-06	3.13E-10	1.42E-06	2.25E-06	4.88E-07	9.95E-01	1.19E+02	1.38E+02	1.15E+06	2.54E+02	1.61E+02	7.40E+02	5.33E-10
Np-239	M	5.41E-07	8.83E-11	3.78E-07	5.23E-07	1.42E-07	9.45E-01	1.07E+02	6.32E+02	3.87E+06	9.05E+02	6.54E+02	2.41E+03	2.73E-09
Np-240	M	5.80E-06	7.37E-10	3.32E-06	5.14E-06	1.15E-06	9.54E-01	5.60E+03	3.05E+03	2.40E+07	5.32E+03	3.44E+03	1.54E+04	2.53E-10
Np-240m	-	1.51E-06	1.90E-10	8.61E-07	1.33E-06	3.06E-07	9.70E-01	4.92E+04	1.01E+05	8.04E+08	1.77E+05	1.15E+05	4.99E+05	9.57E-10
O-15	-	4.46E-06	5.89E-10	2.65E-06	4.05E-06	9.32E-07	8.83E-01	1.79E+05	1.37E+05	1.03E+09	2.30E+05	1.50E+05	6.54E+05	2.22E-11
Os-180	M	1.08E-07	2.52E-11	8.63E-08	1.05E-07	4.81E-08	9.70E-01	1.66E+04	4.76E+05	2.04E+09	5.95E+05	4.89E+05	1.07E+06	1.00E-08
Os-181	M	5.41E-06	6.77E-10	3.04E-06	4.72E-06	1.06E-06	9.18E-01	3.47E+03	2.10E+03	1.68E+07	3.74E+03	2.41E+03	1.07E+04	2.13E-10
Os-182	M	1.64E-06	2.36E-10	1.03E-06	1.52E-06	3.80E-07	9.50E-01	2.76E+02	5.33E+02	3.70E+06	8.48E+02	5.75E+02	2.30E+03	6.82E-10
Os-185	M	3.11E-06	4.05E-10	1.80E-06	2.78E-06	6.39E-07	8.71E-01	2.69E+00	2.99E+00	2.30E+04	5.16E+00	3.34E+00	1.45E+01	3.99E-10
Os-189m	M	7.21E-13	4.49E-16	7.21E-13	7.21E-13	2.20E-11	1.00E+00	1.01E+03	4.22E+09	6.78E+12	4.22E+09	4.22E+09	1.38E+08	1.53E-03
Os-190m	M	6.76E-06	9.05E-10	4.08E-06	6.18E-06	1.41E-06	8.87E-01	3.68E+04	1.85E+04	1.38E+08	3.06E+04	2.02E+04	8.85E+04	1.85E-10
Os-191	M	1.66E-07	3.55E-11	1.33E-07	1.65E-07	6.17E-08	9.45E-01	1.64E+01	3.15E+02	1.47E+06	3.93E+02	3.17E+02	8.48E+02	7.11E-09
Os-191m	M	1.05E-08	2.97E-12	9.52E-09	1.05E-08	5.73E-09	9.80E-01	4.66E+02	1.36E+05	4.82E+08	1.50E+05	1.36E+05	2.50E+05	1.08E-07
Os-193	M	2.69E-07	3.99E-11	1.73E-07	2.50E-07	6.74E-08	9.39E-01	2.02E+02	2.41E+03	1.63E+07	3.75E+03	2.59E+03	9.62E+03	4.46E-09
Os-194	M	6.58E-10	2.74E-13	6.48E-10	6.58E-10	7.78E-10	9.94E-01	1.16E-01	5.48E+02	1.32E+06	5.57E+02	5.48E+02	4.64E+02	1.79E-06
Os-194+D	M	4.09E-07	5.45E-11	2.42E-07	3.70E-07	9.48E-08	9.03E-01	1.16E-01	9.71E-01	7.29E+03	1.64E+00	1.07E+00	4.19E+00	3.17E-09
P-30	-	4.50E-06	5.96E-10	2.67E-06	4.09E-06	9.47E-07	8.83E-01	1.46E+05	1.10E+05	8.33E+08	1.86E+05	1.21E+05	5.24E+05	4.41E-11
P-32	M	9.41E-09	1.99E-12	6.72E-09	9.01E-09	1.20E-08	9.27E-01	1.77E+01	6.11E+03	2.89E+07	8.55E+03	6.38E+03	4.79E+03	2.14E-08
P-33	M	3.73E-11	1.08E-14	3.26E-11	3.71E-11	2.91E-11	9.27E-01	9.96E+00	8.67E+05	2.99E+09	9.91E+05	8.71E+05	1.11E+06	5.57E-06
Pa-227	S	4.37E-08	9.43E-12	3.57E-08	4.37E-08	1.65E-08	1.00E+00	9.51E+03	6.55E+05	3.03E+09	8.02E+05	6.55E+05	1.73E+06	3.03E-08
Pa-228	S	5.10E-06	6.34E-10	2.86E-06	4.45E-06	9.89E-07	1.00E+00	2.76E+02	1.63E+02	1.31E+06	2.90E+02	1.87E+02	8.39E+02	2.61E-10
Pa-230	S	2.86E-06	3.63E-10	1.64E-06	2.52E-06	5.70E-07	1.00E+00	1.45E+01	1.53E+01	1.20E+05	2.67E+01	1.74E+01	7.67E+01	4.70E-10
Pa-231	S	1.39E-07	2.01E-11	8.92E-08	1.31E-07	3.41E-08	9.94E-01	2.12E-05	7.26E-01	5.02E+03	1.13E+00	7.70E-01	2.96E+00	1.54E-05
Pa-232	S	4.29E-06	5.31E-10	2.41E-06	3.76E-06	8.29E-07	9.52E-01	1.93E+02	1.42E+02	1.15E+06	2.53E+02	1.62E+02	7.36E+02	3.32E-10
Pa-233	S	7.43E-07	1.10E-10	4.85E-07	7.03E-07	1.74E-07	9.51E-01	9.37E+00	3.99E+01	2.69E+05	6.11E+01	4.22E+01	1.70E+02	1.93E-09
Pa-234	S	8.71E-06	1.08E-09	4.88E-06	7.62E-06	1.68E-06	9.57E-01	9.06E+02	3.27E+02	2.64E+06	5.84E+02	3.74E+02	1.70E+03	1.64E-10
Pa-234m	-	6.87E-08	9.51E-12	3.98E-08	6.05E-08	2.46E-08	9.99E-01	3.11E+05	1.36E+07	9.86E+10	2.36E+07	1.55E+07	3.81E+07	1.99E-08
Pb-195m	M	6.90E-06	9.03E-10	4.05E-06	6.20E-06	1.41E-06	9.02E-01	2.31E+04	1.11E+04	8.52E+07	1.90E+04	1.24E+04	5.45E+04	1.83E-10
Pb-198	M	1.62E-06	2.38E-10	1.04E-06	1.52E-06	3.80E-07	9.36E-01	2.53E+03	5.02E+03	3.42E+07	7.82E+03	5.35E+03	2.14E+04	7.62E-10
Pb-199	M	6.87E-06	8.22E-10	3.74E-06	5.89E-06	1.28E-06	9.58E-01	4.05E+03	1.85E+03	1.55E+07	3.40E+03	2.16E+03	9.93E+03	1.77E-10
Pb-200	M	5.97E-07	1.05E-10	4.29E-07	5.78E-07	1.72E-07	9.39E-01	2.82E+02	1.52E+03	8.62E+06	2.11E+03	1.57E+03	5.26E+03	2.08E-09
Pb-201	M	3.18E-06	4.23E-10	1.89E-06	2.86E-06	6.65E-07	9.60E-01	6.46E+02	6.37E+02	4.79E+06	1.07E+03	7.08E+02	3.04E+03	3.84E-10
Pb-202	M	3.10E-12	1.94E-15	3.10E-12	3.10E-12	8.92E-11	1.00E+00	2.31E-06	3.24E+04	5.17E+07	3.24E+04	3.24E+04	1.12E+03	5.49E+00
Pb-202+D	M	1.83E-06	2.59E-10	1.14E-06	1.69E-06	4.12E-07	9.06E-01	2.31E-06	6.05E-02	4.27E+02	9.71E-02	6.55E-02	2.69E-01	1.03E-05
Pb-202m	M	9.32E-06	1.17E-09	5.29E-06	8.23E-06	1.82E-06	9.94E-01	1.68E+03	5.45E+02	4.34E+06	9.60E+02	6.17E+02	2.79E+03	1.27E-10
Pb-203	M	1.09E-06	1.67E-10	7.23E-07	1.03E-06	2.67E-07	9.21E-01	1.17E+02	3.50E+02	2.28E+06	5.27E+02	3.70E+02	1.43E+03	1.18E-09
Pb-205	M	3.50E-12	2.20E-15	3.50E-12	3.50E-12	9.82E-11	1.00E+00	4.85E-08	2.87E+04	4.56E+07	2.87E+04	2.87E+04	1.02E+03	2.35E+02
Pb-209	M	5.37E-10	1.15E-13	4.16E-10	5.29E-10	5.66E-10	9.27E-01	1.87E+03	1.13E+07	5.27E+10	1.46E+07	1.15E+07	1.07E+07	2.45E-06
Pb-210	M	1.41E-09	5.69E-13	1.39E-09	1.41E-09	1.67E-09	9.96E-01	3.11E-02	1.10E+02	2.72E+05	1.11E+02	1.10E+02	9.27E+01	1.44E-06
Pb-211	M	2.29E-07	2.98E-11	1.33E-07	2.06E-07	5.16E-08	8.94E-01	1.01E+04	1.48E+05	1.14E+09	2.55E+05	1.65E+05	6.58E+05	6.02E-09
Pb-212	M	5.09E-07	7.95E-11	3.46E-07	4.89E-07	1.26E-07	9.19E-01	5.71E+02	3.67E+03	2.35E+07	5.40E+03	3.82E+03	1.48E+04	2.65E-09
Pb-214	M	9.82E-07	1.39E-10	6.21E-07	9.19E-07	2.21E-07	9.29E-01	1.36E+04	4.48E+04	3.17E+08	7.09E+04	4.79E+04	1.99E+05	1.37E-09
Pd-100	S	2.22E-07	5.07E-11	1.86E-07	2.22E-07	9.37E-08	9.73E-01	6.97E+01	9.71E+02	4.25E+06	1.16E+03	9.71E+02	2.30E+03	2.70E-09
Pd-101	S	1.38E-06	1.79E-10	8.07E-07	1.24E-06	2.86E-07	8.93E-01	7.34E+02	1.79E+03	1.38E+07	3.06E+03	1.99E+03	8.65E+03	4.78E-10
Pd-103	S	1.15E-09	4.95E-13	9.74E-10	1.12E-09	4.85E-09	9.98E-01	1.49E+01	3.91E+04	9.08E+07	4.62E+04	4.01E+04	9.27E+03	5.24E-07
Pd-107	S	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-07	-	-	-	-	-	-

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
Pd-109	S	1.27E-08	2.73E-12	9.75E-09	1.24E-08	1.02E-08	9.92E-01	4.52E+02	1.08E+05	5.02E+08	1.41E+05	1.11E+05	1.34E+05	5.05E-08
Pm-141	S	3.33E-06	4.22E-10	1.90E-06	2.96E-06	6.70E-07	8.77E-01	1.74E+04	1.80E+04	1.42E+08	3.15E+04	2.02E+04	8.92E+04	2.82E-10
Pm-142	-	3.87E-06	5.03E-10	2.27E-06	3.48E-06	8.02E-07	8.80E-01	5.40E+05	4.77E+05	3.67E+09	8.13E+05	5.30E+05	2.30E+06	2.43E-10
Pm-143	S	1.33E-06	1.71E-10	7.57E-07	1.17E-06	2.77E-07	9.18E-01	9.55E-01	2.35E+00	1.83E+04	4.13E+00	2.67E+00	1.13E+01	6.84E-10
Pm-144	S	6.90E-06	8.88E-10	3.99E-06	6.18E-06	1.40E-06	8.75E-01	6.97E-01	3.47E-01	2.70E+03	6.01E-01	3.88E-01	1.71E+00	1.39E-10
Pm-145	S	1.61E-08	6.86E-12	1.57E-08	1.61E-08	2.13E-08	9.68E-01	3.92E-02	1.09E+01	2.57E+04	1.12E+01	1.09E+01	8.27E+00	7.86E-08
Pm-146	S	3.29E-06	4.26E-10	1.92E-06	2.96E-06	6.73E-07	8.73E-01	1.25E-01	1.34E-01	1.04E+03	2.30E-01	1.49E-01	6.57E-01	3.04E-10
Pm-147	S	3.21E-11	8.65E-15	2.73E-11	3.20E-11	2.25E-11	9.42E-01	2.64E-01	2.63E+04	9.76E+07	3.09E+04	2.64E+04	3.75E+04	2.84E-05
Pm-148	S	2.80E-06	3.27E-10	1.50E-06	2.38E-06	5.14E-07	8.45E-01	4.71E+01	5.99E+01	5.13E+05	1.12E+02	7.05E+01	3.26E+02	3.65E-10
Pm-148m	S	8.98E-06	1.15E-09	5.19E-06	8.01E-06	1.80E-06	8.75E-01	6.12E+00	2.35E+00	1.83E+04	4.06E+00	2.63E+00	1.17E+01	1.10E-10
Pm-149	S	4.60E-08	6.54E-12	2.90E-08	4.30E-08	1.37E-08	8.98E-01	1.14E+02	8.33E+03	5.86E+07	1.32E+04	8.91E+03	2.80E+04	2.11E-08
Pm-150	S	6.87E-06	8.07E-10	3.69E-06	5.86E-06	1.26E-06	8.99E-01	2.27E+03	1.10E+03	9.39E+06	2.05E+03	1.29E+03	6.02E+03	1.42E-10
Pm-151	S	1.27E-06	1.78E-10	7.88E-07	1.18E-06	2.84E-07	9.39E-01	2.14E+02	5.39E+02	3.85E+06	8.69E+02	5.80E+02	2.41E+03	7.39E-10
Po-203	M	7.65E-06	9.22E-10	4.17E-06	6.58E-06	1.44E-06	9.35E-01	9.92E+03	4.17E+03	3.46E+07	7.66E+03	4.85E+03	2.22E+04	1.66E-10
Po-205	M	7.36E-06	8.88E-10	4.02E-06	6.33E-06	1.38E-06	9.55E-01	3.37E+03	1.44E+03	1.20E+07	2.64E+03	1.68E+03	7.70E+03	1.70E-10
Po-207	M	6.09E-06	7.50E-10	3.39E-06	5.29E-06	1.17E-06	9.55E-01	1.04E+03	5.38E+02	4.37E+06	9.67E+02	6.20E+02	2.80E+03	2.08E-10
Po-210	M	3.95E-11	4.89E-15	2.21E-11	3.47E-11	7.62E-12	8.60E-01	1.83E+00	1.62E+05	1.31E+09	2.89E+05	1.84E+05	8.39E+05	3.61E-05
Po-211	-	3.59E-08	4.47E-12	2.03E-08	3.17E-08	6.98E-09	8.65E-01	4.24E+07	4.10E+09	3.30E+13	7.26E+09	4.65E+09	2.11E+10	3.97E-08
Po-212	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.17E+13	-	-	-	-	-	-
Po-213	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.20E+12	-	-	-	-	-	-
Po-214	-	3.87E-10	4.79E-14	2.17E-10	3.40E-10	7.46E-11	8.61E-01	1.33E+11	1.20E+15	9.70E+18	2.14E+15	1.37E+15	6.23E+15	3.75E-06
Po-215	-	7.49E-10	1.01E-13	4.54E-10	6.89E-10	1.59E-10	8.90E-01	1.23E+10	5.54E+13	4.11E+17	9.14E+13	6.02E+13	2.61E+14	1.88E-06
Po-216	-	7.87E-11	9.73E-15	4.40E-11	6.90E-11	1.52E-11	8.60E-01	1.46E+08	6.48E+12	5.24E+16	1.16E+13	7.39E+12	3.35E+13	1.86E-05
Po-218	-	4.26E-11	5.24E-15	2.37E-11	3.73E-11	8.16E-12	8.58E-01	1.19E+05	9.83E+09	7.99E+13	1.77E+10	1.12E+10	5.13E+10	3.48E-05
Pr-136	S	9.74E-06	1.19E-09	5.41E-06	8.48E-06	1.86E-06	8.55E-01	2.78E+04	1.00E+04	8.22E+07	1.81E+04	1.15E+04	5.26E+04	9.53E-11
Pr-137	S	2.14E-06	2.79E-10	1.25E-06	1.92E-06	4.46E-07	8.85E-01	4.76E+03	7.55E+03	5.79E+07	1.29E+04	8.42E+03	3.62E+04	4.22E-10
Pr-138	-	3.57E-06	4.72E-10	2.11E-06	3.24E-06	7.51E-07	8.79E-01	2.51E+05	2.41E+05	1.82E+09	4.08E+05	2.65E+05	1.14E+06	2.57E-10
Pr-138m	S	1.14E-05	1.40E-09	6.37E-06	9.96E-06	2.20E-06	8.68E-01	2.89E+03	8.79E+02	7.16E+06	1.57E+03	1.01E+03	4.55E+03	8.14E-11
Pr-139	S	4.42E-07	5.98E-11	2.59E-07	3.96E-07	1.03E-07	9.37E-01	1.35E+03	9.78E+03	7.23E+07	1.67E+04	1.09E+04	4.20E+04	1.96E-09
Pr-142	S	3.14E-07	3.54E-11	1.61E-07	2.59E-07	6.39E-08	8.21E-01	3.17E+02	3.70E+03	3.29E+07	7.22E+03	4.49E+03	1.82E+04	3.22E-09
Pr-142m	S	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.49E+04	-	-	-	-	-	-
Pr-143	S	1.64E-09	3.49E-13	1.23E-09	1.59E-09	2.87E-09	8.64E-01	1.87E+01	3.96E+04	1.86E+08	5.28E+04	4.09E+04	2.26E+04	5.89E-07
Pr-144	S	1.94E-07	2.38E-11	1.04E-07	1.64E-07	4.93E-08	8.21E-01	2.11E+04	3.98E+05	3.25E+09	7.43E+05	4.71E+05	1.57E+06	5.28E-09
Pr-144m	-	8.74E-09	2.72E-12	6.90E-09	8.25E-09	8.44E-09	9.64E-01	5.06E+04	1.81E+07	5.81E+10	2.29E+07	1.91E+07	1.87E+07	9.98E-08
Pr-145	S	6.95E-08	9.39E-12	4.01E-08	6.14E-08	2.32E-08	8.60E-01	1.02E+03	5.11E+04	3.78E+08	8.86E+04	5.78E+04	1.53E+05	1.42E-08
Pr-147	S	3.78E-06	4.81E-10	2.16E-06	3.34E-06	7.69E-07	8.96E-01	2.68E+04	2.38E+04	1.87E+08	4.16E+04	2.69E+04	1.17E+05	2.53E-10
Pt-186	F	3.20E-06	4.17E-10	1.86E-06	2.86E-06	6.58E-07	8.87E-01	3.04E+03	3.22E+03	2.47E+07	5.54E+03	3.60E+03	1.56E+04	3.83E-10
Pt-188	F	6.03E-07	1.02E-10	4.19E-07	5.77E-07	1.68E-07	9.28E-01	2.48E+01	1.33E+02	7.88E+05	1.92E+02	1.39E+02	4.79E+02	1.96E-09
Pt-189	F	1.17E-06	1.71E-10	7.23E-07	1.06E-06	2.78E-07	9.47E-01	5.58E+02	1.52E+03	1.04E+07	2.45E+03	1.67E+03	6.38E+03	9.96E-10
Pt-191	F	9.79E-07	1.55E-10	6.46E-07	9.15E-07	2.58E-07	9.45E-01	9.03E+01	2.94E+02	1.86E+06	4.45E+02	3.14E+02	1.11E+03	1.21E-09
Pt-193	F	2.78E-12	1.74E-15	2.78E-12	2.78E-12	7.57E-11	1.00E+00	1.39E-02	4.41E+04	7.05E+07	4.41E+04	4.41E+04	1.62E+03	1.19E-03
Pt-193m	F	1.68E-08	4.50E-12	1.51E-08	1.68E-08	8.39E-09	9.76E-01	5.84E+01	1.07E+04	4.00E+07	1.19E+04	1.07E+04	2.15E+04	6.87E-08
Pt-195m	F	1.26E-07	3.10E-11	1.09E-07	1.26E-07	5.62E-08	9.55E-01	6.29E+01	1.57E+03	6.39E+06	1.82E+03	1.57E+03	3.53E+03	9.46E-09
Pt-197	F	5.63E-08	1.13E-11	4.37E-08	5.55E-08	1.96E-08	9.61E-01	3.32E+02	1.84E+04	9.19E+07	2.38E+04	1.87E+04	5.30E+04	2.13E-08
Pt-197m	F	2.38E-07	4.02E-11	1.64E-07	2.27E-07	6.72E-08	9.59E-01	3.86E+03	5.09E+04	3.01E+08	7.38E+04	5.33E+04	1.80E+05	5.04E-09
Pt-199	F	8.69E-07	1.16E-10	5.20E-07	7.90E-07	1.88E-07	9.27E-01	1.18E+04	4.42E+04	3.31E+08	7.38E+04	4.86E+04	2.04E+05	1.44E-09
Pt-200	F	1.58E-07	2.88E-11	1.15E-07	1.53E-07	4.86E-08	9.50E-01	4.86E+02	9.74E+03	5.34E+07	1.34E+04	1.01E+04	3.16E+04	7.78E-09
Pu-234	M	1.61E-07	3.18E-11	1.27E-07	1.61E-07	5.27E-08	9.99E-01	6.90E+02	1.29E+04	6.53E+07	1.64E+04	1.29E+04	3.94E+04	8.49E-09
Pu-235	M	2.37E-07	4.39E-11	1.78E-07	2.32E-07	7.30E-08	9.55E-01	1.44E+04	1.91E+05	1.03E+09	2.55E+05	1.96E+05	6.21E+05	6.06E-09
Pu-236	M	1.19E-10	4.45E-14	1.04E-10	1.18E-10	4.58E-10	9.99E-01	2.43E-01	6.16E+03	1.65E+07	7.04E+03	6.21E+03	1.60E+03	1.16E-05
Pu-237	M	1.12E-07	2.24E-11	8.90E-08	1.12E-07	3.83E-08	9.99E-01	5.58E+00	1.50E+02	7.51E+05	1.89E+02	1.50E+02	4.39E+02	1.24E-08
Pu-238	M	7.22E-11	3.14E-14	6.59E-11	7.19E-11	3.85E-10	9.99E-01	7.90E-03	1.56E+03	3.59E+06	1.71E+03	1.57E+03	2.93E+02	9.13E-05
Pu-239	M	2.00E-10	3.97E-14	1.41E-10	1.90E-10	1.90E-10	9.99E-01	2.88E-05	5.02E+02	2.53E+06	7.12E+02	5.29E+02	5.29E+02	8.09E-03
Pu-240	M	6.98E-11	3.10E-14	6.46E-11	6.97E-11	3.70E-10	9.99E-01	1.06E-04	1.44E+03	3.24E+06	1.56E+03	1.44E+03	2.72E+02	6.33E-03
Pu-241	M	4.11E-12	7.99E-16	3.20E-12	4.10E-12	1.48E-12	9.74E-01	4.81E-02	4.73E+04	2.44E+08	6.08E+04	4.75E+04	1.31E+05	4.60E-04
Pu-242	M	6.25E-11	2.64E-14	5.71E-11	6.24E-11	3.08E-10	9.99E-01	1.84E-06	1.61E+03	3.80E+06	1.76E+03	1.61E+03	3.26E+02	4.10E-01
Pu-243	M	5.50E-08	1.14E-11	4.36E-08	5.43E-08	2.00E-08	9.52E-01	1.22E+03	7.04E+04	3.40E+08	8.88E+04	7.13E+04	1.94E+05	2.71E-08
Pu-244	M	1.11E-07	1.96E-08	5.64E-08	9.12E-08	1.90E-08	1.78E+00	8.66E-09	5.08E-01	2.87E+00	9.99E-01	6.18E-01	2.97E+00	2.77E-02
Pu-244+D	M	1.51E-06	1.90E-10	8.61E-07	1.33E-06	3.08E-07	9.73E-01	8.66E-09	6.83E-02	5.43E+02	1.20E-01	7.75E-02	3.35E-01	3.73E-03
Pu-245	M	1.78E-06	2.34E-10	1.05E-06	1.60E-06	3.68E-07	9.50E-01	5.78E+02	1.03E+03	7.83E+06	1.74E+03	1.14E+03	4.98E+03	8.46E-10
Pu-246	M	4.04E-07	6.83E-11	2.87E-07	3.95E-07	1.13E-07	9.55E-01	2.33E+01	1.82E+02	1.08E+06	2.56E+02	1.86E+02	6.50E+02	3.72E-09
Ra-222	-	3.71E-08	5.21E-12	2.35E-08	3.49E-08	8.14E-09	9.03E-01	5.75E+05	5.17E+07	3.68E+11	8.15E+07	5.49E+07	2.35E+08	3.87E-08

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
Ra-223	M	4.34E-07	7.02E-11	2.99E-07	4.17E-07	1.13E-07	9.58E-01	2.21E+01	1.60E+02	9.90E+05	2.32E+02	1.67E+02	6.15E+02	3.13E-09
Ra-223+D	M	1.09E-06	1.61E-10	7.02E-07	1.02E-06	2.65E-07	9.45E-01	2.21E+01	6.46E+01	4.37E+05	1.00E+02	6.91E+01	2.66E+02	1.26E-09
Ra-224	M	3.73E-08	5.50E-12	2.46E-08	3.56E-08	8.58E-09	9.16E-01	6.91E+01	6.09E+03	4.13E+07	9.23E+03	6.38E+03	2.65E+04	3.83E-08
Ra-224+D	M	7.77E-06	8.42E-10	3.90E-06	6.33E-06	1.30E-06	8.98E-01	6.91E+01	2.98E+01	2.75E+05	5.94E+01	3.66E+01	1.78E+02	1.87E-10
Ra-225	M	5.91E-09	2.70E-12	5.89E-09	5.91E-09	8.58E-09	9.77E-01	1.71E+01	8.91E+03	1.95E+07	8.94E+03	8.91E+03	6.13E+03	2.28E-07
Ra-225+D	M	9.42E-07	1.29E-10	5.71E-07	8.56E-07	2.12E-07	9.64E-01	1.71E+01	5.66E+01	4.14E+05	9.34E+01	6.23E+01	2.52E+02	1.45E-09
Ra-226	M	2.29E-08	3.62E-12	1.58E-08	2.22E-08	5.71E-09	9.28E-01	4.33E-04	4.75E+00	3.00E+04	6.88E+00	4.90E+00	1.91E+01	4.81E-06
Ra-226+D	M	8.49E-06	9.87E-10	4.53E-06	7.20E-06	1.54E-06	9.26E-01	4.33E-04	1.28E-02	1.10E+02	2.41E-02	1.51E-02	7.08E-02	1.30E-08
Ra-227	M	6.23E-07	8.76E-11	3.89E-07	5.78E-07	1.44E-07	9.79E-01	8.63E+03	4.26E+04	3.03E+08	6.82E+04	4.59E+04	1.84E+05	2.17E-09
Ra-227+D	M	2.09E-06	3.05E-10	1.34E-06	1.96E-06	4.99E-07	9.79E-01	8.63E+03	1.27E+04	8.70E+07	1.98E+04	1.35E+04	5.32E+04	6.48E-10
Ra-228	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.21E-01	-	-	-	-	-	-
Ra-228+D	M	1.23E-05	1.39E-09	6.39E-06	1.03E-05	2.16E-06	9.26E-01	1.21E-01	3.27E-02	2.90E+02	6.30E-02	3.91E-02	1.86E-01	1.20E-10
Rb-79	F	5.85E-06	7.77E-10	3.49E-06	5.33E-06	1.23E-06	9.14E-01	1.59E+04	8.95E+03	6.74E+07	1.50E+04	9.82E+03	4.26E+04	8.63E-11
Rb-80	-	5.56E-06	7.32E-10	3.29E-06	5.03E-06	1.16E-06	8.83E-01	6.43E+05	3.94E+05	2.99E+09	6.66E+05	4.35E+05	1.89E+06	9.51E-11
Rb-81	F	2.59E-06	3.52E-10	1.58E-06	2.38E-06	5.52E-07	9.02E-01	1.33E+03	1.71E+03	1.26E+07	2.80E+03	1.86E+03	8.01E+03	2.02E-10
Rb-81m	F	9.09E-09	2.04E-12	7.60E-09	9.10E-09	4.12E-09	9.99E-01	1.14E+04	3.77E+06	1.68E+10	4.51E+06	3.77E+06	8.32E+06	5.21E-08
Rb-82	-	4.85E-06	6.37E-10	2.86E-06	4.38E-06	1.01E-06	8.83E-01	2.80E+05	1.97E+05	1.50E+09	3.34E+05	2.18E+05	9.45E+05	1.12E-10
Rb-82m	F	1.35E-05	1.66E-09	7.53E-06	1.18E-05	2.58E-06	8.62E-01	9.79E+02	2.53E+02	2.06E+06	4.54E+02	2.90E+02	1.32E+03	4.11E-11
Rb-83	F	2.18E-06	2.86E-10	1.28E-06	1.97E-06	4.47E-07	9.44E-01	2.93E+00	4.29E+00	3.27E+04	7.31E+00	4.75E+00	2.09E+01	2.35E-10
Rb-84	F	4.22E-06	5.24E-10	2.37E-06	3.70E-06	8.18E-07	9.40E-01	7.72E+00	5.85E+00	4.72E+04	1.04E+01	6.68E+00	3.02E+01	1.24E-10
Rb-86	F	4.67E-07	5.58E-11	2.52E-07	3.99E-07	9.46E-08	8.44E-01	1.36E+01	1.03E+02	8.66E+05	1.92E+02	1.21E+02	5.11E+02	1.27E-09
Rb-87	F	9.11E-11	2.43E-14	7.77E-11	9.08E-11	5.97E-11	9.27E-01	1.47E-11	1.19E+03	4.45E+06	1.39E+03	1.19E+03	1.81E+03	1.36E+04
Rb-88	F	3.36E-06	3.63E-10	1.68E-06	2.73E-06	5.70E-07	8.09E-01	2.05E+04	2.27E+04	2.10E+08	4.53E+04	2.79E+04	1.34E+05	1.89E-10
Rb-89	F	1.05E-05	1.15E-09	5.33E-06	8.63E-06	1.79E-06	8.47E-01	2.40E+04	8.11E+03	7.40E+07	1.60E+04	9.86E+03	4.76E+04	5.84E-11
Re-177	M	2.62E-06	3.34E-10	1.48E-06	2.28E-06	5.35E-07	8.90E-01	2.60E+04	3.36E+04	2.63E+08	5.94E+04	3.86E+04	1.64E+05	4.43E-10
Re-178	M	5.65E-06	6.66E-10	3.01E-06	4.77E-06	1.04E-06	8.73E-01	2.76E+04	1.68E+04	1.43E+08	3.16E+04	1.99E+04	9.14E+04	2.11E-10
Re-180	-	5.29E-06	6.66E-10	2.98E-06	4.64E-06	1.05E-06	8.59E-01	1.50E+05	9.92E+04	7.88E+08	1.76E+05	1.13E+05	5.00E+05	2.31E-10
Re-181	M	3.18E-06	4.25E-10	1.88E-06	2.86E-06	6.76E-07	9.45E-01	3.04E+02	3.04E+02	2.27E+06	5.14E+02	3.38E+02	1.43E+03	3.52E-10
Re-182	M	8.22E-06	1.04E-09	4.64E-06	7.17E-06	1.62E-06	9.40E-01	9.49E+01	3.69E+01	2.92E+05	6.54E+01	4.23E+01	1.87E+02	1.38E-10
Re-182m	M	5.37E-06	6.48E-10	2.91E-06	4.58E-06	1.02E-06	9.26E-01	4.78E+02	2.89E+02	2.40E+06	5.34E+02	3.39E+02	1.52E+03	2.14E-10
Re-184	M	3.94E-06	5.00E-10	2.23E-06	3.46E-06	7.86E-07	8.97E-01	6.66E+00	5.67E+00	4.47E+04	1.00E+01	6.45E+00	2.84E+01	3.04E-10
Re-184m	M	1.52E-06	2.10E-10	9.15E-07	1.37E-06	3.35E-07	9.52E-01	1.53E+00	3.19E+00	2.31E+04	5.30E+00	3.54E+00	1.45E+01	7.42E-10
Re-186	M	5.49E-08	1.05E-11	4.16E-08	5.42E-08	2.03E-08	9.54E-01	6.70E+01	3.85E+03	2.01E+07	5.08E+03	3.90E+03	1.04E+04	2.07E-08
Re-186m	M	1.75E-08	5.33E-12	1.61E-08	1.75E-08	1.12E-08	9.85E-01	3.47E-06	5.82E+00	1.91E+04	6.32E+00	5.82E+00	9.09E+00	6.06E-04
Re-186m+D	M	7.24E-08	1.58E-11	5.77E-08	7.17E-08	3.15E-08	9.73E-01	3.47E-06	1.42E+00	6.52E+03	1.79E+00	1.44E+00	3.27E+00	1.48E-04
Re-187	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-11	-	-	-	-	-	-
Re-188	M	2.38E-07	3.42E-11	1.48E-07	2.18E-07	6.32E-08	9.03E-01	3.58E+02	5.01E+03	3.48E+07	8.05E+03	5.46E+03	1.88E+04	5.11E-09
Re-188m	M	1.28E-07	3.29E-11	1.12E-07	1.28E-07	6.11E-08	9.53E-01	1.96E+04	4.83E+05	1.88E+09	5.52E+05	4.83E+05	1.01E+06	9.00E-09
Re-189	M	2.42E-07	3.75E-11	1.62E-07	2.31E-07	6.20E-08	9.21E-01	2.50E+02	3.37E+03	2.18E+07	5.04E+03	3.53E+03	1.32E+04	4.95E-09
Rh-100	S	1.38E-05	1.52E-09	7.04E-06	1.14E-05	2.35E-06	8.86E-01	2.92E+02	7.18E+01	6.52E+05	1.41E+02	8.69E+01	4.22E+02	4.78E-11
Rh-101	S	8.84E-07	1.39E-10	6.09E-07	8.56E-07	2.22E-07	9.31E-01	2.17E-01	7.93E-01	5.04E+03	1.15E+00	8.19E-01	3.16E+00	7.18E-10
Rh-101m	S	1.19E-06	1.67E-10	7.52E-07	1.12E-06	2.64E-07	9.07E-01	5.83E+01	1.62E+02	1.16E+06	2.57E+02	1.73E+02	7.32E+02	5.46E-10
Rh-102	S	9.73E-06	1.21E-09	5.52E-06	8.60E-06	1.90E-06	8.61E-01	2.39E-01	8.59E-02	6.91E+02	1.51E-01	9.72E-02	4.40E-01	7.11E-11
Rh-102m	S	2.11E-06	2.74E-10	1.24E-06	1.90E-06	4.33E-07	9.87E-01	1.22E+00	1.77E+00	1.36E+04	3.00E+00	1.96E+00	8.60E+00	2.86E-10
Rh-103m	S	9.31E-11	5.57E-14	9.31E-11	9.31E-11	5.59E-10	9.98E-01	6.49E+03	2.10E+08	3.51E+11	2.10E+08	2.10E+08	3.50E+07	6.47E-06
Rh-105	S	3.15E-07	4.42E-11	2.00E-07	2.97E-07	6.90E-08	9.05E-01	1.72E+02	1.81E+03	1.29E+07	2.85E+03	1.92E+03	8.27E+03	2.15E-09
Rh-106	-	9.66E-07	1.26E-10	5.62E-07	8.64E-07	2.10E-07	8.83E-01	7.31E+05	2.58E+06	1.98E+10	4.43E+06	2.88E+06	1.19E+07	7.26E-10
Rh-106m	S	1.37E-05	1.66E-09	7.55E-06	1.19E-05	2.58E-06	8.70E-01	2.76E+03	6.97E+02	5.75E+06	1.26E+03	8.02E+02	3.70E+03	5.19E-11
Rh-107	S	1.28E-06	1.79E-10	8.04E-07	1.20E-06	2.83E-07	9.00E-01	1.68E+04	4.38E+04	3.13E+08	6.98E+04	4.68E+04	1.98E+05	5.42E-10
Rh-99	S	2.50E-06	3.34E-10	1.50E-06	2.25E-06	5.29E-07	8.91E-01	1.58E+01	2.14E+01	1.60E+05	3.56E+01	2.37E+01	1.01E+02	2.59E-10
Rh-99m	S	3.03E-06	3.83E-10	1.74E-06	2.69E-06	6.00E-07	8.59E-01	1.29E+03	1.49E+03	1.18E+07	2.60E+03	1.68E+03	7.54E+03	2.22E-10
Rn-218	-	3.39E-09	4.36E-13	1.96E-09	3.04E-09	6.81E-10	8.75E-01	6.24E+08	6.33E+11	4.92E+15	1.10E+12	7.06E+11	3.15E+12	4.29E-07
Rn-219	-	2.25E-07	3.18E-11	1.42E-07	2.11E-07	4.96E-08	9.11E-01	5.52E+06	8.10E+07	5.73E+11	1.28E+08	8.64E+07	3.67E+08	6.24E-09
Rn-219+D	-	6.58E-07	9.03E-11	4.03E-07	6.07E-07	1.52E-07	9.31E-01	5.52E+06	2.71E+07	1.98E+11	4.43E+07	2.94E+07	1.17E+08	2.09E-09
Rn-220	-	1.71E-09	2.22E-13	1.00E-09	1.54E-09	3.47E-10	8.80E-01	3.93E+05	7.86E+08	6.05E+12	1.34E+09	8.73E+08	3.87E+09	8.54E-07
Rn-222	-	1.74E-09	2.29E-13	1.03E-09	1.58E-09	3.60E-10	8.83E-01	6.62E+01	1.30E+05	9.84E+08	2.19E+05	1.43E+05	6.26E+05	8.44E-07
Rn-222+D	-	8.48E-06	9.85E-10	4.52E-06	7.19E-06	1.54E-06	9.26E-01	6.62E+01	2.53E+01	2.18E+05	4.76E+01	2.99E+01	1.40E+02	1.65E-10
Ru-103	M	2.04E-06	2.69E-10	1.21E-06	1.86E-06	4.22E-07	8.82E-01	6.44E+00	1.08E+01	8.17E+04	1.82E+01	1.18E+01	5.21E+01	3.34E-10
Ru-105	M	3.52E-06	4.51E-10	2.03E-06	3.14E-06	7.08E-07	8.98E-01	1.37E+03	1.30E+03	1.02E+07	2.26E+03	1.46E+03	6.47E+03	1.94E-10
Ru-106	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.87E-01	-	-	-	-	-	-
Ru-106+D	M	9.66E-07	1.26E-10	5.62E-07	8.64E-07	2.10E-07	8.83E-01	6.87E-01	2.42E+00	1.86E+04	4.17E+00	2.71E+00	1.11E+01	7.26E-10
Ru-94	M	2.31E-06	2.99E-10	1.35E-06	2.08E-06	4.70E-07	9.51E-01	7.03E+03	9.63E+03	7.44E+07	1.65E+04	1.07E+04	4.73E+04	2.50E-10

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
Ru-97	M	8.63E-07	1.27E-10	5.69E-07	8.26E-07	2.01E-07	9.49E-01	8.72E+01	3.20E+02	2.18E+06	4.86E+02	3.35E+02	1.38E+03	6.91E-10
S-35	M	8.77E-12	3.07E-15	8.13E-12	8.77E-12	1.01E-11	9.27E-01	2.89E+00	1.07E+06	3.06E+09	1.15E+06	1.07E+06	9.30E+05	2.51E-05
Sb-115	M	3.92E-06	5.16E-10	2.32E-06	3.56E-06	8.15E-07	8.91E-01	1.15E+04	9.87E+03	7.50E+07	1.67E+04	1.09E+04	4.75E+04	1.92E-10
Sb-116	M	1.05E-05	1.21E-09	5.55E-06	8.87E-06	1.88E-06	8.67E-01	2.31E+04	7.62E+03	6.61E+07	1.44E+04	9.02E+03	4.26E+04	7.44E-11
Sb-116m	M	1.47E-05	1.76E-09	8.05E-06	1.27E-05	2.76E-06	8.56E-01	6.04E+03	1.44E+03	1.21E+07	2.64E+03	1.67E+03	7.69E+03	5.38E-11
Sb-117	M	5.78E-07	9.10E-11	3.94E-07	5.56E-07	1.51E-07	9.62E-01	2.17E+03	1.17E+04	7.45E+07	1.72E+04	1.22E+04	4.49E+04	1.23E-09
Sb-118m	M	1.21E-05	1.45E-09	6.59E-06	1.04E-05	2.25E-06	8.70E-01	1.21E+03	3.47E+02	2.90E+06	6.37E+02	4.04E+02	1.87E+03	6.54E-11
Sb-119	M	2.58E-09	1.57E-12	2.58E-09	2.58E-09	1.07E-08	9.92E-01	1.59E+02	1.87E+05	3.08E+08	1.87E+05	1.87E+05	4.52E+04	2.71E-07
Sb-120	M	1.94E-06	2.55E-10	1.15E-06	1.75E-06	4.08E-07	9.27E-01	2.29E+04	3.84E+04	2.92E+08	6.47E+04	4.25E+04	1.82E+05	3.90E-10
Sb-120m	M	1.15E-05	1.38E-09	6.27E-06	9.87E-06	2.15E-06	8.80E-01	4.39E+01	1.31E+01	1.09E+05	2.39E+01	1.52E+01	6.98E+01	6.92E-11
Sb-122	M	1.97E-06	2.55E-10	1.15E-06	1.78E-06	4.05E-07	8.75E-01	9.37E+01	1.64E+02	1.26E+06	2.80E+02	1.81E+02	7.95E+02	4.13E-10
Sb-124	M	8.89E-06	1.02E-09	4.70E-06	7.51E-06	1.58E-06	8.71E-01	4.20E+00	1.63E+00	1.42E+04	3.09E+00	1.93E+00	9.19E+00	9.35E-11
Sb-124m	M	1.57E-06	2.02E-10	9.13E-07	1.41E-06	3.18E-07	8.75E-01	2.35E+05	5.15E+05	4.00E+09	8.85E+05	5.73E+05	2.54E+06	5.27E-10
Sb-124n	M	7.77E-12	4.77E-15	7.79E-12	7.77E-12	3.42E-11	9.93E-01	1.80E+04	7.03E+09	1.15E+13	7.01E+09	7.03E+09	1.60E+09	9.38E-05
Sb-125	M	1.81E-06	2.41E-10	1.08E-06	1.65E-06	3.82E-07	8.81E-01	2.50E-01	4.72E-01	3.55E+03	7.92E-01	5.18E-01	2.24E+00	4.58E-10
Sb-126	M	1.28E-05	1.62E-09	7.37E-06	1.14E-05	2.55E-06	8.66E-01	2.04E+01	5.54E+00	4.37E+04	9.62E+00	6.22E+00	2.78E+01	6.64E-11
Sb-126m	M	6.94E-06	8.91E-10	4.03E-06	6.21E-06	1.40E-06	8.72E-01	1.92E+04	9.53E+03	7.42E+07	1.64E+04	1.07E+04	4.72E+04	1.22E-10
Sb-127	M	3.07E-06	3.95E-10	1.79E-06	2.76E-06	6.20E-07	8.83E-01	6.57E+01	7.29E+01	5.67E+05	1.25E+02	8.11E+01	3.61E+02	2.74E-10
Sb-128	M	1.40E-05	1.78E-09	8.04E-06	1.25E-05	2.77E-06	8.85E-01	6.74E+02	1.64E+02	1.29E+06	2.85E+02	1.83E+02	8.27E+02	6.03E-11
Sb-128m	M	9.03E-06	1.14E-09	5.16E-06	8.02E-06	1.79E-06	8.63E-01	3.50E+04	1.35E+04	1.07E+08	2.37E+04	1.52E+04	6.82E+04	9.59E-11
Sb-129	M	6.86E-06	8.16E-10	3.73E-06	5.90E-06	1.27E-06	8.75E-01	1.41E+03	7.04E+02	5.92E+06	1.30E+03	8.19E+02	3.80E+03	1.25E-10
Sb-130	M	1.51E-05	1.86E-09	8.44E-06	1.32E-05	2.91E-06	8.63E-01	9.11E+03	2.10E+03	1.71E+07	3.76E+03	2.41E+03	1.09E+04	5.82E-11
Sb-131	M	9.09E-06	1.05E-09	4.81E-06	7.69E-06	1.64E-06	8.58E-01	1.58E+04	6.11E+03	5.29E+07	1.15E+04	7.22E+03	3.39E+04	9.81E-11
Sc-43	S	4.73E-06	6.30E-10	2.84E-06	4.32E-06	9.88E-07	8.86E-01	1.56E+03	1.12E+03	8.41E+06	1.87E+03	1.23E+03	5.36E+03	5.99E-11
Sc-44	S	9.95E-06	1.21E-09	5.55E-06	8.69E-06	1.90E-06	8.63E-01	1.55E+03	5.42E+02	4.45E+06	9.71E+02	6.20E+02	2.84E+03	2.99E-11
Sc-44m	S	1.15E-06	1.59E-10	7.15E-07	1.07E-06	2.46E-07	9.02E-01	1.04E+02	3.00E+02	2.17E+06	4.83E+02	3.23E+02	1.40E+03	2.48E-10
Sc-46	S	9.64E-06	1.15E-09	5.22E-06	8.28E-06	1.78E-06	8.47E-01	3.02E+00	1.11E+00	9.32E+03	2.05E+00	1.29E+00	6.02E+00	3.29E-11
Sc-47	S	3.62E-07	5.90E-11	2.56E-07	3.55E-07	9.25E-08	9.26E-01	7.55E+01	6.78E+02	4.16E+06	9.58E+02	6.91E+02	2.65E+03	8.19E-10
Sc-48	S	1.62E-05	1.90E-09	8.68E-06	1.39E-05	2.94E-06	8.40E-01	1.39E+02	3.07E+01	2.62E+05	5.73E+01	3.58E+01	1.69E+02	2.06E-11
Sc-49	S	1.90E-08	3.39E-12	1.23E-08	1.74E-08	1.55E-08	8.15E-01	6.35E+03	1.23E+06	6.91E+09	1.90E+06	1.35E+06	1.51E+06	1.85E-08
Se-70	F	4.22E-06	5.64E-10	2.53E-06	3.84E-06	8.95E-07	9.36E-01	8.88E+03	6.77E+03	5.06E+07	1.13E+04	7.44E+03	3.19E+04	1.03E-10
Se-73	F	4.52E-06	6.16E-10	2.74E-06	4.15E-06	9.73E-07	9.05E-01	8.49E+02	6.25E+02	4.58E+06	1.03E+03	6.80E+02	2.90E+03	1.04E-10
Se-73m	F	1.06E-06	1.40E-10	6.30E-07	9.61E-07	2.21E-07	9.41E-01	9.34E+03	2.82E+04	2.13E+08	4.74E+04	3.11E+04	1.35E+05	4.27E-10
Se-75	F	1.45E-06	2.16E-10	9.57E-07	1.38E-06	3.38E-07	9.18E-01	2.11E+00	4.77E+00	3.20E+04	7.23E+00	5.01E+00	2.05E+01	3.29E-10
Se-77m	-	2.85E-07	4.63E-11	2.01E-07	2.79E-07	7.25E-08	9.80E-01	1.25E+06	1.35E+07	8.30E+10	1.91E+07	1.38E+07	5.30E+07	1.61E-09
Se-79	F	1.10E-11	3.83E-15	1.02E-11	1.10E-11	1.26E-11	9.27E-01	1.07E-05	9.84E+03	2.83E+07	1.06E+04	9.84E+03	8.59E+03	1.41E-01
Se-81	F	4.68E-08	6.82E-12	2.91E-08	4.31E-08	1.83E-08	8.78E-01	1.97E+04	1.44E+06	9.89E+09	2.32E+06	1.57E+06	3.69E+06	1.15E-08
Se-81m	F	3.56E-08	6.91E-12	2.78E-08	3.55E-08	1.14E-08	9.87E-01	6.36E+03	5.45E+05	2.81E+09	6.98E+05	5.46E+05	1.70E+06	1.35E-08
Se-83	F	1.16E-05	1.37E-09	6.26E-06	9.90E-06	2.13E-06	8.81E-01	1.62E+04	4.77E+03	4.04E+07	8.83E+03	5.58E+03	2.60E+04	4.74E-11
Si-31	S	1.11E-08	1.93E-12	7.11E-09	1.01E-08	1.05E-08	8.34E-01	2.32E+03	7.53E+05	4.33E+09	1.17E+06	8.27E+05	7.96E+05	1.96E-08
Si-32	S	2.18E-11	6.80E-15	1.96E-11	2.18E-11	1.96E-11	9.27E-01	1.54E-03	5.08E+03	1.63E+07	5.65E+03	5.08E+03	5.65E+03	2.05E-04
Si-32+D	S	9.44E-09	1.99E-12	6.74E-09	9.03E-09	1.21E-08	9.28E-01	1.54E-03	1.17E+01	5.56E+04	1.64E+01	1.22E+01	9.14E+00	4.72E-07
Sm-141	M	6.39E-06	7.97E-10	3.61E-06	5.62E-06	1.25E-06	8.51E-01	3.57E+04	1.98E+04	1.58E+08	3.50E+04	2.25E+04	1.01E+05	1.51E-10
Sm-141m	M	9.04E-06	1.12E-09	5.07E-06	7.91E-06	1.75E-06	8.90E-01	1.61E+04	6.03E+03	4.86E+07	1.07E+04	6.89E+03	3.11E+04	1.02E-10
Sm-142	M	2.99E-07	4.37E-11	1.81E-07	2.72E-07	7.88E-08	9.44E-01	5.02E+03	5.36E+04	3.66E+08	8.85E+04	5.89E+04	2.03E+05	2.94E-09
Sm-145	M	3.83E-08	1.59E-11	3.74E-08	3.83E-08	4.58E-08	9.65E-01	7.44E-01	6.06E+01	1.46E+05	6.20E+01	6.06E+01	5.06E+01	2.29E-08
Sm-146	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.73E-09	-	-	-	-	-	-
Sm-147	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.54E-12	-	-	-	-	-	-
Sm-151	M	3.60E-13	2.23E-16	3.60E-13	3.60E-13	2.24E-12	9.98E-01	7.70E-03	3.13E+05	5.05E+08	3.13E+05	3.13E+05	5.02E+04	1.19E-02
Sm-153	M	1.06E-07	2.46E-11	8.67E-08	1.06E-07	4.91E-08	9.40E-01	1.30E+02	3.93E+03	1.69E+07	4.80E+03	3.93E+03	8.47E+03	8.96E-09
Sm-155	M	2.81E-07	5.27E-11	2.11E-07	2.77E-07	9.38E-08	9.25E-01	1.65E+04	1.91E+05	1.02E+09	2.54E+05	1.94E+05	5.72E+05	3.48E-09
Sm-156	M	3.80E-07	6.23E-11	2.65E-07	3.69E-07	1.01E-07	9.24E-01	6.46E+02	5.53E+03	3.38E+07	7.94E+03	5.70E+03	2.08E+04	2.59E-09
Sn-110	M	1.13E-06	1.61E-10	7.24E-07	1.07E-06	2.58E-07	9.56E-01	1.52E+03	4.23E+03	2.97E+07	6.60E+03	4.46E+03	1.85E+04	5.94E-10
Sn-111	M	2.29E-06	2.84E-10	1.28E-06	2.01E-06	4.50E-07	8.71E-01	1.03E+04	1.56E+04	1.26E+08	2.78E+04	1.77E+04	7.92E+04	3.25E-10
Sn-113	M	2.02E-08	3.76E-12	1.38E-08	1.94E-08	1.21E-08	9.92E-01	2.20E+00	3.30E+02	1.77E+06	4.83E+02	3.44E+02	5.51E+02	3.29E-08
Sn-117m	M	4.70E-07	7.74E-11	3.33E-07	4.60E-07	1.27E-07	9.61E-01	1.86E+01	1.24E+02	7.52E+05	1.75E+02	1.26E+02	4.58E+02	1.51E-09
Sn-119m	M	1.20E-09	7.29E-13	1.20E-09	1.20E-09	5.07E-09	9.92E-01	8.63E-01	2.18E+03	3.59E+06	2.18E+03	2.18E+03	5.16E+02	5.84E-07
Sn-121	M	1.30E-10	3.19E-14	1.07E-10	1.28E-10	7.35E-11	9.27E-01	2.24E+02	5.60E+06	2.28E+10	6.81E+06	5.69E+06	9.91E+06	5.86E-06
Sn-121m	M	8.85E-10	4.88E-13	8.81E-10	8.85E-10	2.58E-09	9.86E-01	1.26E-02	1.38E+02	2.50E+05	1.39E+02	1.38E+02	4.73E+01	2.57E-06
Sn-121m+D	M	9.86E-10	5.13E-13	9.64E-10	9.85E-10	2.64E-09	9.86E-01	1.26E-02	1.24E+02	2.38E+05	1.27E+02	1.24E+02	4.63E+01	2.31E-06
Sn-123	M	3.88E-08	5.08E-12	2.17E-08	3.36E-08	1.41E-08	8.43E-01	1.96E+00	1.80E+02	1.38E+06	3.22E+02	2.08E+02	4.96E+02	2.20E-08
Sn-123m	M	4.63E-07	7.53E-11	3.27E-07	4.52E-07	1.24E-07	9.36E-01	9.09E+03	6.31E+04	3.88E+08	8.93E+04	6.46E+04	2.36E+05	1.66E-09

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
Sn-125	M	1.53E-06	1.80E-10	8.20E-07	1.31E-06	2.87E-07	8.57E-01	2.62E+01	6.02E+01	5.12E+05	1.12E+02	7.03E+01	3.21E+02	5.57E-10
Sn-126	M	9.96E-08	2.29E-11	8.35E-08	9.97E-08	4.27E-08	9.57E-01	6.93E-06	1.05E+00	4.58E+03	1.26E+00	1.05E+00	2.45E+00	3.71E-05
Sn-126+D	M	8.84E-06	1.14E-09	5.14E-06	7.91E-06	1.80E-06	8.74E-01	6.93E-06	1.30E-02	1.01E+02	2.23E-02	1.45E-02	6.38E-02	4.58E-07
Sn-127	M	9.25E-06	1.07E-09	4.92E-06	7.85E-06	1.67E-06	9.28E-01	2.89E+03	1.01E+03	8.76E+06	1.91E+03	1.19E+03	5.61E+03	8.64E-11
Sn-128	M	2.62E-06	3.55E-10	1.58E-06	2.38E-06	5.77E-07	9.04E-01	6.16E+03	7.83E+03	5.78E+07	1.30E+04	8.62E+03	3.56E+04	3.16E-10
Sr-80	M	5.08E-11	3.18E-14	5.08E-11	5.08E-11	9.34E-10	1.00E+00	3.64E+03	2.16E+08	3.45E+11	2.16E+08	2.16E+08	1.17E+07	9.19E-06
Sr-81	M	5.97E-06	7.95E-10	3.57E-06	5.43E-06	1.26E-06	8.95E-01	1.43E+04	8.04E+03	6.04E+07	1.35E+04	8.84E+03	3.81E+04	8.85E-11
Sr-82	M	5.00E-11	3.12E-14	5.00E-11	5.00E-11	9.18E-10	1.00E+00	1.01E+01	6.09E+05	9.76E+08	6.09E+05	6.09E+05	3.32E+04	9.57E-06
Sr-82+D	M	4.85E-06	6.37E-10	2.86E-06	4.38E-06	1.01E-06	8.83E-01	1.01E+01	7.11E+00	5.41E+04	1.21E+01	7.87E+00	3.41E+01	1.12E-10
Sr-83	M	3.60E-06	4.52E-10	2.04E-06	3.18E-06	7.07E-07	9.06E-01	1.87E+02	1.73E+02	1.38E+06	3.05E+02	1.96E+02	8.80E+02	1.49E-10
Sr-85	M	2.20E-06	2.90E-10	1.31E-06	2.00E-06	4.54E-07	9.68E-01	3.90E+00	5.51E+00	4.18E+04	9.26E+00	6.06E+00	2.67E+01	2.33E-10
Sr-85m	M	8.21E-07	1.21E-10	5.45E-07	7.88E-07	1.89E-07	9.21E-01	5.24E+03	2.09E+04	1.41E+08	3.14E+04	2.17E+04	9.06E+04	6.56E-10
Sr-87m	M	1.33E-06	1.82E-10	8.22E-07	1.24E-06	2.85E-07	9.17E-01	2.16E+03	5.34E+03	3.90E+07	8.64E+03	5.73E+03	2.49E+04	4.16E-10
Sr-89	M	7.19E-09	1.50E-12	5.12E-09	6.87E-09	9.64E-09	8.56E-01	5.01E+00	2.45E+03	1.17E+07	3.44E+03	2.56E+03	1.83E+03	8.44E-08
Sr-90	M	4.82E-10	1.04E-13	3.77E-10	4.77E-10	3.74E-10	9.27E-01	2.38E-02	3.14E+02	1.46E+06	4.02E+02	3.17E+02	4.05E+02	2.30E-06
Sr-90+D	M	1.96E-08	3.92E-12	1.36E-08	1.86E-08	1.71E-08	1.00E+00	2.38E-02	7.16E+00	3.58E+04	1.03E+01	7.54E+00	8.21E+00	5.25E-08
Sr-91	M	3.31E-06	4.01E-10	1.82E-06	2.86E-06	6.30E-07	8.62E-01	6.39E+02	6.74E+02	5.56E+06	1.23E+03	7.80E+02	3.54E+03	1.86E-10
Sr-92	M	6.69E-06	7.51E-10	3.47E-06	5.58E-06	1.16E-06	8.31E-01	2.24E+03	1.21E+03	1.08E+07	2.34E+03	1.45E+03	6.99E+03	9.66E-11
Ta-172	S	7.04E-06	8.67E-10	3.91E-06	6.11E-06	1.35E-06	9.13E-01	9.90E+03	4.63E+03	3.76E+07	8.34E+03	5.34E+03	2.42E+04	1.56E-10
Ta-173	S	2.38E-06	3.18E-10	1.40E-06	2.13E-06	5.13E-07	9.30E-01	1.66E+03	2.26E+03	1.69E+07	3.84E+03	2.53E+03	1.05E+04	4.56E-10
Ta-174	S	2.55E-06	3.45E-10	1.52E-06	2.29E-06	5.51E-07	8.65E-01	5.06E+03	6.90E+03	5.10E+07	1.16E+04	7.68E+03	3.19E+04	4.61E-10
Ta-175	S	4.16E-06	5.07E-10	2.28E-06	3.56E-06	7.99E-07	9.34E-01	5.78E+02	4.48E+02	3.67E+06	8.17E+02	5.23E+02	2.33E+03	2.63E-10
Ta-176	S	1.06E-05	1.18E-09	5.42E-06	8.75E-06	1.82E-06	9.41E-01	7.51E+02	2.27E+02	2.04E+06	4.43E+02	2.75E+02	1.32E+03	1.03E-10
Ta-177	S	1.20E-07	2.77E-11	9.45E-08	1.16E-07	5.28E-08	9.41E-01	1.07E+02	2.86E+03	1.24E+07	3.63E+03	2.96E+03	6.50E+03	9.15E-09
Ta-178	-	3.29E-07	5.05E-11	2.00E-07	2.87E-07	8.82E-08	9.05E-01	3.91E+04	3.95E+05	2.58E+09	6.50E+05	4.53E+05	1.47E+06	3.49E-09
Ta-178m	S	3.78E-06	5.58E-10	2.44E-06	3.56E-06	8.91E-07	9.06E-01	2.76E+03	2.42E+03	1.64E+07	3.76E+03	2.57E+03	1.03E+04	3.03E-10
Ta-179	S	3.62E-08	1.17E-11	3.41E-08	3.62E-08	2.43E-08	9.59E-01	3.80E-01	3.30E+01	1.02E+05	3.50E+01	3.30E+01	4.91E+01	3.01E-08
Ta-180	S	2.03E-06	3.04E-10	1.33E-06	1.93E-06	4.85E-07	9.12E-01	6.93E-14	5.42E-02	3.62E+02	8.27E-02	5.70E-02	2.27E-01	2.73E+02
Ta-180m	S	6.13E-08	1.83E-11	5.62E-08	6.13E-08	3.71E-08	9.46E-01	7.49E+02	3.89E+04	1.30E+08	4.24E+04	3.89E+04	6.43E+04	1.81E-08
Ta-182	S	6.04E-06	7.22E-10	3.26E-06	5.15E-06	1.13E-06	9.25E-01	2.20E+00	1.18E+00	9.91E+03	2.19E+00	1.39E+00	6.33E+00	1.90E-10
Ta-182m	S	7.38E-07	1.27E-10	5.27E-07	7.19E-07	2.09E-07	9.28E-01	2.30E+04	1.01E+05	5.87E+08	1.41E+05	1.04E+05	3.57E+05	1.55E-09
Ta-183	S	9.40E-07	1.52E-10	6.41E-07	9.01E-07	2.48E-07	9.32E-01	4.96E+01	1.70E+02	1.05E+06	2.50E+02	1.78E+02	6.46E+02	1.22E-09
Ta-184	S	7.02E-06	9.13E-10	4.11E-06	6.30E-06	1.44E-06	9.14E-01	6.98E+02	3.27E+02	2.52E+06	5.59E+02	3.65E+02	1.60E+03	1.67E-10
Ta-185	S	6.24E-07	1.01E-10	4.20E-07	5.91E-07	1.73E-07	9.23E-01	7.43E+03	3.88E+04	2.40E+08	5.77E+04	4.10E+04	1.40E+05	1.88E-09
Ta-186	S	6.69E-06	8.88E-10	3.98E-06	6.06E-06	1.40E-06	9.13E-01	3.47E+04	1.71E+04	1.29E+08	2.87E+04	1.89E+04	8.17E+04	1.78E-10
Tb-147	M	7.30E-06	9.02E-10	4.08E-06	6.38E-06	1.41E-06	8.59E-01	3.68E+03	1.77E+03	1.43E+07	3.16E+03	2.02E+03	9.14E+03	1.37E-10
Tb-149	M	7.60E-06	8.98E-10	4.10E-06	6.49E-06	1.40E-06	8.63E-01	1.46E+03	6.71E+02	5.68E+06	1.24E+03	7.86E+02	3.64E+03	1.33E-10
Tb-150	M	7.79E-06	9.48E-10	4.31E-06	6.76E-06	1.48E-06	8.68E-01	1.86E+03	8.26E+02	6.79E+06	1.49E+03	9.52E+02	4.35E+03	1.30E-10
Tb-151	M	3.66E-06	4.92E-10	2.18E-06	3.31E-06	7.84E-07	8.92E-01	3.45E+02	3.18E+02	2.36E+06	5.34E+02	3.52E+02	1.48E+03	2.70E-10
Tb-153	M	7.24E-07	1.13E-10	4.72E-07	6.76E-07	1.92E-07	9.31E-01	1.08E+02	4.83E+02	3.09E+06	7.40E+02	5.17E+02	1.82E+03	1.33E-09
Tb-154	M	1.18E-05	1.27E-09	5.90E-06	9.61E-06	1.96E-06	8.89E-01	2.84E+02	8.14E+01	7.56E+05	1.63E+02	9.99E+01	4.90E+02	8.57E-11
Tb-155	M	3.26E-07	6.20E-11	2.39E-07	3.18E-07	1.12E-07	9.37E-01	4.75E+01	4.68E+02	2.46E+06	6.39E+02	4.80E+02	1.36E+03	2.96E-09
Tb-156	M	8.37E-06	1.02E-09	4.60E-06	7.23E-06	1.59E-06	8.83E-01	4.74E+01	1.93E+01	1.58E+05	3.51E+01	2.23E+01	1.02E+02	1.23E-10
Tb-156m	M	2.16E-08	8.08E-12	2.10E-08	2.16E-08	1.90E-08	9.57E-01	2.49E+02	3.62E+04	9.68E+07	3.72E+04	3.62E+04	4.12E+04	4.41E-08
Tb-156n	M	4.06E-09	1.23E-12	3.66E-09	4.06E-09	2.73E-09	9.55E-01	1.21E+03	9.42E+05	3.11E+09	1.05E+06	9.42E+05	1.40E+06	2.35E-07
Tb-157	M	1.64E-09	6.82E-13	1.62E-09	1.64E-09	1.85E-09	9.62E-01	4.62E-03	6.81E+01	1.64E+05	6.89E+01	6.81E+01	6.03E+01	4.49E-06
Tb-158	M	3.57E-06	4.43E-10	1.99E-06	3.10E-06	7.01E-07	8.54E-01	4.62E-03	3.52E-02	2.84E+02	6.32E-02	4.06E-02	1.79E-01	2.34E-09
Tb-160	M	5.23E-06	6.37E-10	2.88E-06	4.53E-06	9.92E-07	8.61E-01	3.50E+00	2.34E+00	1.92E+04	4.25E+00	2.70E+00	1.23E+01	2.07E-10
Tb-161	M	3.45E-08	1.06E-11	3.11E-08	3.42E-08	2.48E-08	9.54E-01	3.66E+01	3.35E+03	1.09E+07	3.71E+03	3.38E+03	4.66E+03	2.86E-08
Tc-101	M	1.37E-06	1.90E-10	8.58E-07	1.28E-06	3.03E-07	8.94E-01	2.57E+04	6.30E+04	4.54E+08	1.01E+05	6.74E+04	2.85E+05	4.81E-10
Tc-104	M	9.75E-06	1.11E-09	5.10E-06	8.18E-06	1.73E-06	8.98E-01	2.00E+04	6.88E+03	6.04E+07	1.31E+04	8.20E+03	3.88E+04	6.93E-11
Tc-93	M	7.31E-06	8.08E-10	3.74E-06	6.06E-06	1.25E-06	8.91E-01	2.21E+03	1.02E+03	9.23E+06	1.99E+03	1.23E+03	5.96E+03	8.34E-11
Tc-93m	M	3.62E-06	3.90E-10	1.81E-06	2.94E-06	5.98E-07	8.98E-01	8.37E+03	7.75E+03	7.19E+07	1.55E+04	9.54E+03	4.69E+04	1.67E-10
Tc-94	M	1.24E-05	1.53E-09	6.91E-06	1.08E-05	2.38E-06	8.70E-01	1.24E+03	3.47E+02	2.81E+06	6.22E+02	3.98E+02	1.81E+03	5.09E-11
Tc-94m	M	8.70E-06	1.06E-09	4.80E-06	7.55E-06	1.65E-06	8.59E-01	7.00E+03	2.82E+03	2.31E+07	5.11E+03	3.25E+03	1.49E+04	7.34E-11
Tc-95	M	3.63E-06	4.51E-10	2.04E-06	3.20E-06	7.05E-07	8.77E-01	3.04E+02	2.87E+02	2.31E+06	5.10E+02	3.25E+02	1.48E+03	1.74E-10
Tc-95m	M	2.93E-06	3.78E-10	1.71E-06	2.63E-06	5.93E-07	8.73E-01	4.15E+00	4.88E+00	3.78E+04	8.36E+00	5.43E+00	2.41E+01	2.17E-10
Tc-96	M	1.16E-05	1.42E-09	6.48E-06	1.02E-05	2.23E-06	8.60E-01	5.91E+01	1.78E+01	1.46E+05	3.19E+01	2.03E+01	9.27E+01	5.62E-11
Tc-96m	M	2.13E-07	2.57E-11	1.16E-07	1.83E-07	4.15E-08	9.38E-01	7.07E+03	1.07E+05	8.83E+08	1.96E+05	1.24E+05	5.47E+05	2.81E-09
Tc-97	M	2.94E-10	1.85E-13	2.94E-10	2.94E-10	2.83E-09	1.00E+00	2.67E-07	3.41E+02	5.42E+05	3.41E+02	3.41E+02	3.54E+01	2.41E-01
Tc-97m	M	1.04E-09	3.40E-13	8.97E-10	1.04E-09	2.81E-09	9.99E-01	2.91E+00	8.42E+03	2.58E+07	9.76E+03	8.42E+03	3.12E+03	5.45E-07
Tc-98	M	6.45E-06	8.13E-10	3.68E-06	5.72E-06	1.27E-06	8.67E-01	1.65E-07	1.79E-02	1.42E+02	3.14E-02	2.02E-02	9.11E-02	2.07E-05

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
Tc-99	M	8.14E-11	2.15E-14	6.91E-11	8.11E-11	5.29E-11	9.27E-01	3.25E-06	1.33E+03	5.03E+06	1.57E+03	1.33E+03	2.05E+03	7.85E-02
Tc-99m	M	3.94E-07	6.70E-11	2.87E-07	3.89E-07	1.06E-07	9.46E-01	1.01E+03	8.14E+03	4.79E+07	1.12E+04	8.25E+03	3.03E+04	1.55E-09
Te-116	M	1.34E-07	2.49E-11	9.61E-08	1.28E-07	5.14E-08	9.80E-01	2.44E+03	5.59E+04	3.01E+08	7.79E+04	5.85E+04	1.46E+05	5.16E-09
Te-121	M	2.46E-06	3.22E-10	1.45E-06	2.23E-06	5.12E-07	9.02E-01	1.49E+01	2.02E+01	1.54E+05	3.42E+01	2.23E+01	9.69E+01	3.18E-10
Te-121m	M	7.84E-07	1.14E-10	5.07E-07	7.41E-07	1.83E-07	9.17E-01	1.64E+00	6.87E+00	4.73E+04	1.06E+01	7.27E+00	2.94E+01	9.83E-10
Te-123	M	2.73E-09	1.64E-12	2.74E-09	2.73E-09	9.96E-09	9.89E-01	6.93E-14	3.71E+01	6.18E+04	3.70E+01	3.71E+01	1.02E+01	1.28E+05
Te-123m	M	4.49E-07	7.41E-11	3.19E-07	4.39E-07	1.21E-07	9.51E-01	2.11E+00	1.49E+01	9.02E+04	2.10E+01	1.52E+01	5.53E+01	1.68E-09
Te-125m	M	6.95E-09	3.70E-12	6.76E-09	6.94E-09	1.93E-08	9.86E-01	4.36E+00	1.91E+03	3.60E+06	1.97E+03	1.92E+03	6.90E+02	1.06E-07
Te-127	M	2.10E-08	2.92E-12	1.30E-08	1.95E-08	5.26E-09	8.94E-01	6.49E+02	1.04E+05	7.48E+08	1.68E+05	1.12E+05	4.15E+05	3.95E-08
Te-127m	M	2.73E-09	1.23E-12	2.49E-09	2.67E-09	6.09E-09	9.83E-01	2.32E+00	2.60E+03	5.77E+06	2.85E+03	2.66E+03	1.17E+03	2.76E-07
Te-129	M	2.45E-07	3.29E-11	1.46E-07	2.23E-07	5.96E-08	8.89E-01	5.23E+03	7.23E+04	5.38E+08	1.21E+05	7.94E+04	2.97E+05	3.46E-09
Te-129m	M	1.38E-07	1.82E-11	7.97E-08	1.23E-07	3.40E-08	9.85E-01	7.53E+00	1.67E+02	1.26E+06	2.89E+02	1.87E+02	6.76E+02	5.54E-09
Te-131	M	1.79E-06	2.37E-10	1.06E-06	1.60E-06	3.81E-07	9.17E-01	1.46E+04	2.67E+04	2.02E+08	4.51E+04	2.99E+04	1.25E+05	4.66E-10
Te-131m	M	6.61E-06	8.07E-10	3.67E-06	5.75E-06	1.26E-06	9.49E-01	2.02E+02	9.71E+01	7.95E+05	1.75E+02	1.12E+02	5.09E+02	1.22E-10
Te-132	M	7.84E-07	1.19E-10	5.23E-07	7.53E-07	1.96E-07	9.36E-01	7.76E+01	3.18E+02	2.10E+06	4.77E+02	3.31E+02	1.27E+03	1.05E-09
Te-133	M	4.29E-06	5.29E-10	2.41E-06	3.76E-06	8.30E-07	8.42E-01	2.93E+04	2.44E+04	1.98E+08	4.34E+04	2.78E+04	1.26E+05	2.15E-10
Te-133m	M	1.09E-05	1.31E-09	5.97E-06	9.41E-06	2.04E-06	9.27E-01	6.57E+03	1.96E+03	1.63E+07	3.57E+03	2.27E+03	1.05E+04	7.68E-11
Te-134	M	3.78E-06	5.00E-10	2.24E-06	3.42E-06	7.87E-07	8.72E-01	8.71E+03	7.95E+03	6.01E+07	1.34E+04	8.79E+03	3.82E+04	2.37E-10
Th-226	S	2.36E-08	4.09E-12	1.72E-08	2.31E-08	6.66E-09	9.47E-01	1.18E+04	1.59E+06	9.16E+09	2.18E+06	1.62E+06	5.62E+06	5.90E-08
Th-227	S	3.78E-07	5.69E-11	2.50E-07	3.61E-07	9.12E-08	9.71E-01	1.35E+01	1.11E+02	7.36E+05	1.67E+02	1.16E+02	4.59E+02	3.61E-09
Th-228	S	5.59E-09	1.03E-12	4.17E-09	5.49E-09	1.87E-09	9.80E-01	3.62E-01	1.99E+02	1.08E+06	2.67E+02	2.03E+02	5.95E+02	2.43E-07
Th-229	S	2.25E-07	4.29E-11	1.73E-07	2.23E-07	7.19E-08	9.59E-01	9.44E-05	4.65E-01	2.44E+03	6.05E-01	4.70E-01	1.46E+00	2.19E-06
Th-229+D	S	1.17E-06	1.72E-10	7.44E-07	1.08E-06	2.84E-07	9.72E-01	9.44E-05	8.83E-02	6.01E+02	1.39E-01	9.57E-02	3.64E-01	4.16E-07
Th-230	S	8.19E-10	1.83E-13	6.60E-10	8.08E-10	4.87E-10	9.97E-01	9.00E-06	1.23E+02	5.50E+05	1.52E+02	1.25E+02	2.07E+02	6.09E-03
Th-231	S	2.45E-08	5.52E-12	2.01E-08	2.45E-08	1.26E-08	9.85E-01	2.38E+02	2.97E+04	1.32E+08	3.62E+04	2.97E+04	5.77E+04	5.59E-08
Th-232	S	3.42E-10	8.65E-14	2.87E-10	3.40E-10	3.20E-10	9.98E-01	4.93E-11	2.94E+02	1.16E+06	3.50E+02	2.96E+02	3.14E+02	2.68E+03
Th-234	S	1.64E-08	3.71E-12	1.37E-08	1.64E-08	6.70E-09	9.57E-01	1.05E+01	2.01E+03	8.89E+06	2.41E+03	2.01E+03	4.93E+03	8.70E-08
Th-234+D	S	1.14E-07	1.68E-11	6.95E-08	1.02E-07	3.68E-08	9.91E-01	1.05E+01	2.80E+02	1.90E+06	4.59E+02	3.12E+02	8.66E+02	1.21E-08
Ti-44	S	2.39E-07	6.03E-11	2.09E-07	2.39E-07	1.08E-07	9.45E-01	1.47E-02	5.49E-01	2.18E+03	6.28E-01	5.49E-01	1.21E+00	3.20E-09
Ti-44+D	S	1.02E-05	1.27E-09	5.76E-06	8.93E-06	2.01E-06	8.71E-01	1.47E-02	1.40E-02	1.12E+02	2.47E-02	1.59E-02	7.08E-02	8.13E-11
Ti-45	S	3.80E-06	5.01E-10	2.25E-06	3.46E-06	7.88E-07	8.82E-01	1.97E+03	1.77E+03	1.34E+07	2.99E+03	1.94E+03	8.53E+03	7.84E-11
Tl-194	F	3.25E-06	4.38E-10	1.95E-06	2.96E-06	6.90E-07	8.86E-01	1.10E+04	1.15E+04	8.56E+07	1.92E+04	1.27E+04	5.43E+04	3.93E-10
Tl-194m	F	1.01E-05	1.32E-09	5.92E-06	9.08E-06	2.07E-06	9.27E-01	1.11E+04	3.57E+03	2.73E+07	6.09E+03	3.97E+03	1.74E+04	1.21E-10
Tl-195	F	6.03E-06	7.00E-10	3.19E-06	5.07E-06	1.09E-06	9.44E-01	5.23E+03	2.77E+03	2.38E+07	5.23E+03	3.29E+03	1.53E+04	2.00E-10
Tl-197	F	1.65E-06	2.21E-10	9.69E-07	1.46E-06	3.52E-07	9.34E-01	2.14E+03	4.17E+03	3.12E+07	7.11E+03	4.72E+03	1.96E+04	7.46E-10
Tl-198	F	9.67E-06	1.11E-09	5.08E-06	8.12E-06	1.72E-06	9.48E-01	1.15E+03	3.76E+02	3.28E+06	7.16E+02	4.48E+02	2.11E+03	1.26E-10
Tl-198m	F	5.05E-06	6.75E-10	3.01E-06	4.58E-06	1.06E-06	9.81E-01	3.25E+03	1.97E+03	1.48E+07	3.31E+03	2.17E+03	9.39E+03	2.33E-10
Tl-199	F	8.56E-07	1.31E-10	5.57E-07	7.98E-07	2.11E-07	9.31E-01	8.18E+02	3.09E+03	2.02E+07	4.75E+03	3.31E+03	1.25E+04	1.46E-09
Tl-200	F	5.93E-06	7.35E-10	3.32E-06	5.17E-06	1.15E-06	9.52E-01	2.33E+02	1.24E+02	1.00E+06	2.21E+02	1.42E+02	6.39E+02	2.07E-10
Tl-201	F	1.88E-07	4.17E-11	1.54E-07	1.87E-07	7.29E-08	9.44E-01	8.31E+01	1.41E+03	6.35E+06	1.72E+03	1.42E+03	3.63E+03	6.61E-09
Tl-202	F	1.83E-06	2.59E-10	1.14E-06	1.69E-06	4.12E-07	9.06E-01	2.07E+01	3.75E+01	2.65E+05	6.03E+01	4.06E+01	1.67E+02	7.11E-10
Tl-204	F	2.76E-09	6.66E-13	2.32E-09	2.74E-09	2.30E-09	9.63E-01	1.83E-01	2.08E+02	8.64E+05	2.48E+02	2.10E+02	2.50E+02	4.50E-07
Tl-206	-	6.05E-09	1.28E-12	4.36E-09	5.80E-09	8.50E-09	9.34E-01	8.67E+04	4.62E+07	2.18E+11	6.41E+07	4.82E+07	3.29E+07	2.13E-07
Tl-207	-	1.52E-08	2.29E-12	9.22E-09	1.37E-08	9.36E-09	8.55E-01	7.64E+04	1.77E+07	1.17E+11	2.91E+07	1.96E+07	2.87E+07	9.30E-08
Tl-208	-	1.76E-05	1.81E-09	8.48E-06	1.40E-05	2.77E-06	8.79E-01	1.19E+05	2.31E+04	2.24E+08	4.79E+04	2.90E+04	1.47E+05	7.85E-11
Tl-209	-	9.83E-06	1.13E-09	5.19E-06	8.27E-06	1.75E-06	8.65E-01	1.66E+05	5.86E+04	5.10E+08	1.11E+05	6.96E+04	3.29E+05	1.44E-10
Tm-162	M	8.69E-06	9.76E-10	4.47E-06	7.19E-06	1.52E-06	8.83E-01	1.68E+04	6.58E+03	5.86E+07	1.28E+04	7.95E+03	3.76E+04	1.23E-10
Tm-166	M	8.98E-06	1.03E-09	4.71E-06	7.53E-06	1.60E-06	9.12E-01	7.88E+02	2.90E+02	2.53E+06	5.52E+02	3.45E+02	1.63E+03	1.18E-10
Tm-167	M	3.97E-07	6.88E-11	2.77E-07	3.82E-07	1.20E-07	9.28E-01	2.74E+01	2.24E+02	1.29E+06	3.20E+02	2.32E+02	7.40E+02	2.65E-09
Tm-170	M	1.01E-08	2.55E-12	8.58E-09	1.00E-08	7.17E-09	9.44E-01	1.97E+00	6.21E+02	2.46E+06	7.31E+02	6.27E+02	8.74E+02	1.04E-07
Tm-171	M	6.97E-10	2.29E-13	6.59E-10	6.97E-10	4.88E-10	9.53E-01	3.61E-01	1.63E+03	4.98E+06	1.73E+03	1.63E+03	2.34E+03	1.50E-06
Tm-172	M	2.35E-06	2.66E-10	1.21E-06	1.96E-06	4.18E-07	8.98E-01	9.55E+01	1.36E+02	1.20E+06	2.64E+02	1.63E+02	7.65E+02	4.76E-10
Tm-173	M	1.62E-06	2.21E-10	9.94E-07	1.50E-06	3.49E-07	8.95E-01	7.37E+02	1.53E+03	1.12E+07	2.49E+03	1.65E+03	7.10E+03	6.97E-10
Tm-175	M	4.78E-06	5.99E-10	2.71E-06	4.22E-06	9.43E-07	8.92E-01	2.40E+04	1.69E+04	1.35E+08	2.98E+04	1.92E+04	8.57E+04	2.40E-10
U-230	M	3.07E-09	5.72E-13	2.28E-09	3.00E-09	1.26E-09	9.87E-01	1.22E+01	1.21E+04	6.48E+07	1.63E+04	1.24E+04	2.94E+04	4.43E-07
U-231	M	1.60E-07	3.26E-11	1.27E-07	1.60E-07	5.71E-08	9.61E-01	6.02E+01	1.18E+03	5.78E+06	1.48E+03	1.18E+03	3.30E+03	8.77E-09
U-232	M	5.98E-10	1.38E-13	4.75E-10	5.91E-10	5.58E-10	9.97E-01	9.63E-03	1.94E+02	8.39E+05	2.44E+02	1.96E+02	2.08E+02	9.06E-06
U-233	M	9.82E-10	1.75E-13	6.96E-10	9.50E-10	4.57E-10	9.98E-01	4.37E-06	1.02E+02	5.74E+05	1.44E+02	1.06E+02	2.20E+02	1.06E-02
U-234	M	2.52E-10	6.79E-14	2.11E-10	2.51E-10	3.84E-10	9.98E-01	2.83E-06	3.99E+02	1.48E+06	4.76E+02	4.00E+02	2.62E+02	6.39E-02
U-235	M	5.19E-07	8.28E-11	3.62E-07	5.06E-07	1.31E-07	9.60E-01	9.85E-10	2.01E-01	1.26E+03	2.89E-01	2.06E-01	7.98E-01	9.32E-02
U-235+D	M	-	-	-	-	-	9.60E-01	9.85E-10	-	-	-	-	-	-
U-236	M	1.25E-10	3.97E-14	1.08E-10	1.25E-10	3.19E-10	9.99E-01	2.96E-08	8.03E+02	2.53E+06	9.30E+02	8.03E+02	3.15E+02	1.24E+01

Isotope	ICRP Lung Absorption Type	External Exposure Slope Factor (risk/yr per pCi/g)	External Exposure Slope Factor (1 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (5 cm) (risk/yr per pCi/g)	External Exposure Slope Factor (15 cm) (risk/yr per pCi/g)	Ground Plane External Exposure Slope Factor (risk/yr per pCi/cm^2)	Area Correction Factor	Lambda	Soil Volume PRG (pCi/g)	Soil Volume @ 1cm PRG (pCi/g)	Soil Volume @ 5cm PRG (pCi/g)	Soil Volume @ 15cm PRG (pCi/g)	Ground Plane PRG (pCi/cm2)	Soil Volume PRG (mg/kg)
U-237	M	3.76E-07	6.74E-11	2.76E-07	3.68E-07	1.13E-07	9.53E-01	3.75E+01	3.15E+02	1.76E+06	4.29E+02	3.21E+02	1.05E+03	3.86E-09
U-238	M	4.99E-11	2.37E-14	4.91E-11	4.99E-11	2.63E-10	1.00E+00	1.55E-10	2.01E+03	4.23E+06	2.04E+03	2.01E+03	3.81E+02	5.98E+03
U-238+D	M	1.14E-07	1.68E-11	6.96E-08	1.02E-07	3.71E-08	9.79E-01	1.55E-10	8.99E-01	6.10E+03	1.47E+00	1.00E+00	2.76E+00	2.68E+00
U-239	M	1.21E-07	2.43E-11	9.08E-08	1.16E-07	4.68E-08	9.58E-01	1.55E+04	4.02E+05	2.00E+09	5.35E+05	4.19E+05	1.04E+06	1.20E-08
U-240	M	7.34E-10	3.25E-13	7.14E-10	7.34E-10	2.11E-09	9.98E-01	4.31E+02	1.77E+06	3.99E+09	1.82E+06	1.77E+06	6.15E+05	1.91E-06
V-47	M	4.36E-06	5.75E-10	2.58E-06	3.96E-06	9.10E-07	8.82E-01	1.12E+04	8.74E+03	6.63E+07	1.48E+04	9.63E+03	4.19E+04	7.14E-11
V-48	M	1.40E-05	1.65E-09	7.55E-06	1.20E-05	2.56E-06	8.44E-01	1.56E+01	3.97E+00	3.37E+04	7.36E+00	4.63E+00	2.17E+01	2.37E-11
V-49	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.67E-01	-	-	-	-	-	-
W-176	F	3.20E-07	7.69E-11	2.71E-07	3.20E-07	1.40E-07	9.42E-01	2.64E+03	2.63E+04	1.10E+08	3.11E+04	2.63E+04	6.02E+04	3.41E-09
W-177	F	3.63E-06	4.92E-10	2.15E-06	3.25E-06	7.84E-07	9.27E-01	2.70E+03	2.41E+03	1.78E+07	4.07E+03	2.69E+03	1.12E+04	3.07E-10
W-178	F	1.59E-08	4.95E-12	1.48E-08	1.59E-08	1.01E-08	9.71E-01	1.17E+01	2.27E+03	7.30E+06	2.44E+03	2.27E+03	3.58E+03	6.73E-08
W-178+D	F	3.45E-07	5.54E-11	2.15E-07	3.03E-07	9.83E-08	9.15E-01	1.17E+01	1.11E+02	6.92E+05	1.78E+02	1.27E+02	3.90E+02	3.29E-09
W-179	F	6.02E-08	1.93E-11	5.63E-08	6.02E-08	4.30E-08	9.67E-01	9.71E+03	5.02E+05	1.57E+09	5.37E+05	5.02E+05	7.03E+05	1.80E-08
W-181	F	4.86E-08	1.51E-11	4.52E-08	4.86E-08	3.06E-08	9.56E-01	2.09E+00	1.35E+02	4.35E+05	1.45E+02	1.35E+02	2.15E+02	2.27E-08
W-185	F	2.92E-10	6.68E-14	2.37E-10	2.90E-10	1.39E-10	9.45E-01	3.37E+00	3.67E+04	1.61E+08	4.52E+04	3.70E+04	7.71E+04	3.91E-06
W-187	F	2.04E-06	2.70E-10	1.20E-06	1.85E-06	4.27E-07	9.40E-01	2.54E+02	3.99E+02	3.01E+06	6.78E+02	4.39E+02	1.90E+03	5.69E-10
W-188	F	7.02E-09	1.06E-12	4.64E-09	6.69E-09	1.69E-09	9.11E-01	3.64E+00	1.71E+03	1.14E+07	2.59E+03	1.80E+03	7.12E+03	1.72E-07
Xe-120	-	1.71E-06	2.27E-10	1.00E-06	1.53E-06	3.70E-07	9.51E-01	9.11E+03	1.68E+04	1.27E+08	2.88E+04	1.88E+04	7.79E+04	4.31E-10
Xe-121	-	8.74E-06	9.99E-10	4.58E-06	7.31E-06	1.55E-06	9.02E-01	9.08E+03	3.47E+03	3.03E+07	6.62E+03	4.14E+03	1.95E+04	8.96E-11
Xe-122	-	1.83E-07	2.80E-11	1.18E-07	1.73E-07	5.30E-08	9.06E-01	3.02E+02	5.48E+03	3.58E+07	8.50E+03	5.80E+03	1.89E+04	4.30E-09
Xe-123	-	2.72E-06	3.47E-10	1.57E-06	2.41E-06	5.50E-07	9.03E-01	2.92E+03	3.58E+03	2.80E+07	6.19E+03	4.04E+03	1.77E+04	2.92E-10
Xe-125	-	9.38E-07	1.38E-10	6.04E-07	8.83E-07	2.27E-07	9.06E-01	3.57E+02	1.26E+03	8.59E+06	1.96E+03	1.34E+03	5.22E+03	8.59E-10
Xe-127	-	9.52E-07	1.45E-10	6.33E-07	9.12E-07	2.36E-07	9.33E-01	6.95E+00	2.35E+01	1.55E+05	3.54E+01	2.46E+01	9.49E+01	8.35E-10
Xe-129m	-	4.25E-08	1.04E-11	3.20E-08	4.15E-08	3.27E-08	9.79E-01	3.16E+01	2.29E+03	9.34E+06	3.04E+03	2.34E+03	2.97E+03	1.81E-08
Xe-131m	-	1.41E-08	3.74E-12	1.10E-08	1.39E-08	1.24E-08	9.81E-01	2.13E+01	4.62E+03	1.74E+07	5.93E+03	4.69E+03	5.26E+03	5.53E-08
Xe-133	-	6.62E-08	1.66E-11	5.68E-08	6.62E-08	3.42E-08	9.64E-01	4.82E+01	2.27E+03	9.07E+06	2.65E+03	2.27E+03	4.40E+03	1.22E-08
Xe-133m	-	9.25E-08	1.52E-11	6.23E-08	8.89E-08	3.05E-08	9.73E-01	1.16E+02	3.86E+03	2.35E+07	5.74E+03	4.02E+03	1.17E+04	8.63E-09
Xe-135	-	9.71E-07	1.40E-10	6.27E-07	9.22E-07	2.21E-07	9.07E-01	6.68E+02	2.28E+03	1.58E+07	3.53E+03	2.40E+03	1.00E+04	8.95E-10
Xe-135m	-	1.86E-06	2.44E-10	1.10E-06	1.68E-06	3.85E-07	8.84E-01	2.38E+04	4.36E+04	3.32E+08	7.37E+04	4.83E+04	2.11E+05	4.79E-10
Xe-138	-	5.62E-06	6.21E-10	2.87E-06	4.65E-06	9.60E-07	8.93E-01	2.57E+04	1.54E+04	1.39E+08	3.02E+04	1.86E+04	9.02E+04	1.61E-10
Y-86	S	1.73E-05	2.02E-09	9.25E-06	1.47E-05	3.13E-06	8.98E-01	4.12E+02	7.98E+01	6.83E+05	1.49E+02	9.39E+01	4.41E+02	3.23E-11
Y-86m	S	8.35E-07	1.23E-10	5.48E-07	7.95E-07	1.92E-07	9.19E-01	7.59E+03	2.98E+04	2.02E+08	4.53E+04	3.13E+04	1.29E+05	6.54E-10
Y-87	S	1.94E-06	2.58E-10	1.16E-06	1.76E-06	4.05E-07	9.69E-01	7.56E+01	1.21E+02	9.10E+05	2.02E+02	1.33E+02	5.80E+02	2.70E-10
Y-88	S	1.37E-05	1.48E-09	6.90E-06	1.12E-05	2.29E-06	8.81E-01	2.37E+00	5.91E-01	5.47E+03	1.17E+00	7.23E-01	3.54E+00	4.26E-11
Y-90	S	1.92E-08	3.82E-12	1.32E-08	1.81E-08	1.67E-08	1.00E+00	9.49E+01	1.49E+04	7.47E+07	2.16E+04	1.58E+04	1.71E+04	2.74E-08
Y-90m	S	2.58E-06	3.56E-10	1.60E-06	2.39E-06	5.58E-07	9.12E-01	1.90E+03	2.43E+03	1.76E+07	3.92E+03	2.63E+03	1.13E+04	2.23E-10
Y-91	S	2.51E-08	3.60E-12	1.46E-08	2.21E-08	1.31E-08	8.37E-01	4.32E+00	6.19E+02	4.32E+06	1.06E+03	7.03E+02	1.19E+03	2.53E-08
Y-91m	S	2.34E-06	3.05E-10	1.38E-06	2.11E-06	4.78E-07	8.92E-01	7.33E+03	1.06E+04	8.10E+07	1.79E+04	1.17E+04	5.17E+04	2.55E-10
Y-92	S	1.26E-06	1.52E-10	6.86E-07	1.08E-06	2.49E-07	8.43E-01	1.71E+03	4.86E+03	4.03E+07	8.92E+03	5.67E+03	2.46E+04	5.06E-10
Y-93	S	4.60E-07	5.56E-11	2.49E-07	3.92E-07	9.78E-08	8.14E-01	6.01E+02	4.83E+03	4.00E+07	8.92E+03	5.67E+03	2.27E+04	1.45E-09
Y-94	S	5.45E-06	6.40E-10	2.92E-06	4.64E-06	1.00E-06	8.30E-01	1.91E+04	1.27E+04	1.08E+08	2.37E+04	1.49E+04	6.91E+04	1.21E-10
Y-95	S	4.80E-06	4.91E-10	2.28E-06	3.78E-06	7.58E-07	8.29E-01	3.40E+04	2.57E+04	2.52E+08	5.42E+04	3.27E+04	1.63E+05	1.39E-10
Yb-162	S	3.26E-07	6.32E-11	2.45E-07	3.21E-07	1.11E-07	9.37E-01	1.93E+04	1.90E+05	9.79E+08	2.53E+05	1.93E+05	5.58E+05	3.10E-09
Yb-166	S	9.46E-08	3.04E-11	8.82E-08	9.47E-08	6.53E-08	9.52E-01	1.07E+02	3.58E+03	1.11E+07	3.84E+03	3.57E+03	5.18E+03	1.08E-08
Yb-167	S	6.21E-07	1.21E-10	4.61E-07	6.02E-07	2.15E-07	9.28E-01	2.08E+04	1.09E+05	5.58E+08	1.46E+05	1.12E+05	3.14E+05	1.69E-09
Yb-169	S	7.76E-07	1.45E-10	5.66E-07	7.56E-07	2.53E-07	9.21E-01	7.90E+00	3.33E+01	1.78E+05	4.56E+01	3.41E+01	1.02E+02	1.38E-09
Yb-175	S	1.54E-07	2.21E-11	9.75E-08	1.44E-07	3.50E-08	9.01E-01	6.04E+01	1.31E+03	9.12E+06	2.07E+03	1.40E+03	5.76E+03	7.36E-09
Yb-177	S	8.35E-07	1.05E-10	4.71E-07	7.28E-07	1.69E-07	8.82E-01	3.20E+03	1.31E+04	1.04E+08	2.31E+04	1.50E+04	6.45E+04	1.40E-09
Yb-178	S	1.44E-07	1.99E-11	8.94E-08	1.33E-07	3.17E-08	8.98E-01	4.92E+03	1.15E+05	8.29E+08	1.84E+05	1.24E+05	5.20E+05	8.04E-09
Zn-62	M	1.87E-06	2.46E-10	1.11E-06	1.69E-06	3.90E-07	8.79E-01	6.56E+02	1.20E+03	9.12E+06	2.02E+03	1.33E+03	5.75E+03	2.20E-10
Zn-63	M	4.87E-06	6.35E-10	2.86E-06	4.39E-06	1.00E-06	8.62E-01	9.56E+03	6.85E+03	5.26E+07	1.17E+04	7.60E+03	3.34E+04	8.76E-11
Zn-65	M	2.81E-06	3.31E-10	1.51E-06	2.39E-06	5.10E-07	8.43E-01	1.04E+00	1.32E+00	1.12E+04	2.45E+00	1.55E+00	7.26E+00	1.60E-10
Zn-69	M	1.67E-09	3.54E-13	1.25E-09	1.62E-09	2.91E-09	8.92E-01	6.39E+03	1.29E+07	6.09E+10	1.72E+07	1.33E+07	7.41E+06	2.70E-07
Zn-69m	M	1.78E-06	2.38E-10	1.08E-06	1.64E-06	3.74E-07	8.89E-01	4.41E+02	8.39E+02	6.27E+06	1.38E+03	9.10E+02	3.99E+03	2.55E-10
Zn-71m	M	6.84E-06	8.91E-10	4.02E-06	6.17E-06	1.40E-06	8.68E-01	1.55E+03	7.85E+02	6.02E+06	1.34E+03	8.70E+02	3.83E+03	6.98E-11
Zn-72	M	4.68E-07	7.87E-11	3.38E-07	4.60E-07	1.24E-07	9.43E-01	1.31E+02	8.90E+02	5.29E+06	1.23E+03	9.06E+02	3.36E+03	9.52E-10
Zr-86	M	1.04E-06	1.50E-10	6.72E-07	9.87E-07	2.38E-07	9.82E-01	3.68E+02	1.08E+03	7.52E+06	1.68E+03	1.14E+03	4.74E+03	4.92E-10
Zr-88	M	1.65E-06	2.25E-10	1.01E-06	1.53E-06	3.54E-07	9.70E-01	3.03E+00	5.70E+00	4.18E+04	9.31E+00	6.15E+00	2.66E+01	3.21E-10
Zr-89	M	5.38E-06	6.63E-10	3.00E-06	4.72E-06	1.03E-06	9.32E-01	7.74E+01	4.64E+01	3.77E+05	8.33E+01	5.29E+01	2.43E+02	1.04E-10
Zr-93	M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.53E-07	-	-	-	-	-	-
Zr-95	M	3.40E-06	4.25E-10	1.93E-06	3.00E-06	6.63E-07	8.65E-01	3.95E+00	4.04E+00	3.24E+04	7.13E+00	4.58E+00	2.07E+01	1.89E-10
Zr-97	M	8.62E-07	1.04E-10	4.71E-07	7.43E-07	1.69E-07	8.63E-01	3.59E+02	1.45E+03	1.20E+07	2.66E+03	1.69E+03	7.41E+03	7.61E-10