

# Dose Rate in Contaminated Street

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## Introduction

There is a need for dose coefficients which could be used to estimate anticipated dose rates in an urban environment that is radiologically contaminated. Coefficients for evaluation of the intake of radionuclides published by the International Commission on Radiological Protection (ICRP 2001) are applicable to the inhalation and ingestion exposures; however ICRP has not published, with the exception of radionuclides of the noble gas elements, dose coefficients for exposure to radionuclides located outside the body. The US Environmental Protection Agency (EPA), in Federal Guidance Report 12 (EPA 1993), tabulated dose rate coefficients for exposures to radionuclides distributed in air, water, soil, and on the surface of the ground. These coefficients were calculated for idealized exposure geometries of infinite dimensions (semi-infinite source in air, infinite planar source on the ground, etc.). We develop here the relationship between the dose rate coefficients for exposures in a contaminated urban street to dose rate coefficients for an infinite planar source as given in Federal Guidance Report 12. The dose quantity evaluated is the air kerma rate one meter above the street. The urban environment (sidewalk, street and exterior of buildings lining the street) is assumed to be uniformly contaminated to the same activity per unit area.

## Methods

Air kerma rates were calculated for monoenergetic photon emitters at a height of 1 m on the sidewalk and in the street. The street (64.4 ft wide) was assumed to be of infinite length and lined with sidewalks (13 ft wide) and buildings of uniform height on both sides of the street. Calculation of the air kerma rate involves an integral of a dose kernel over the contaminated surfaces. The kernel for the kerma rate,  $\dot{D}(r)$ , at distance  $r$  from a point source of photons of energy  $E$  is given by

$$\dot{D}(r) = \frac{1}{4\pi r^2} (\mu/\rho)_T E e^{-\mu r} \quad (1)$$

where  $(\mu/\rho)_T$  and  $\mu$  are the mass energy transfer and linear attenuation coefficients, respectively in air for photons of energy  $E$  (Berger *et al.* 1999). The kernel of Eqn (1) does not include a contribution from scattered photons; i.e., no photon buildup factor is included in the equation.

The dose rate 1 meter above the street at locations  $(x, y)$  can be expressed as the integral of the dose kernel over the contaminated surfaces of the sidewalk, street, and exterior of buildings on both sides of the street. The dose rate at location  $(x, y)$ ,  $\dot{D}(x, y)$ , is given by

$$\dot{D}(x, y) = \int_S dS S_a \dot{D}(r) \quad (2)$$

where  $S_a$  is the activity of the contamination per unit surface area,  $r$  is given as  $r = |(x, y, 1) - \bar{r}_S|$ ; vector  $\bar{r}_S$  is the location of the area element  $dS$  of activity  $S_a dS$  in the integrand evaluated over surface  $S$ . Eqn (2) was evaluated at two locations on the sidewalk and in the middle of the street. The dose rates at these locations were normalized to the dose rate above an infinite plane.

The dose rate  $\dot{D}_p(E, h)$  at height  $h$  (here taken as 1 m) above an infinite plane with surface aerial contamination  $S_a$  of a monoenergetic photon emitter of energy  $E$  is given by

$$\dot{D}_p(E, h) = \frac{S_a (\mu / \rho)_T E E_1(\mu h)}{2} \quad (3)$$

where  $E_1(x)$  is the first-order exponential integral function (Shultis and Faw 1996). Note that Eqn (3), like Eqn (1), does not include a contribution from scattered photons; i.e., no photon buildup factor is included. The  $E_1(x)$  function is evaluated using the formulations given by Abramowitz and Stegun (1964). The contribution of scattered photons effectively cancel in the relative dose rate values,  $\dot{D}(x, y) / \dot{D}_p(E, h)$ , tabulated in Table 1 as a function of building height and street location.

## Results

Figs. 1 - 3 show the relative dose rate for monoenergetic photon emitters of energy ranging from 10 keV to 10 MeV at locations in a street lined by buildings of fixed heights. The calculations were carried out at two sidewalk locations (3.3 and 6.5 ft from the buildings lining the street as locations adjacent to the buildings and the middle of the sidewalk) and a location in the middle of the street (32.2 ft from the edge of the sidewalk) for buildings of five heights (12.5, 30, 59, 150, and 200 ft). The surfaces of the sidewalks, street, and buildings are assumed to be contaminated to the same level. At all locations, the dose rate increases with building height although little further increase is evident with building height greater than 150 ft and decrease with distance from the buildings. Fig. 4 shows the relative dose rate at various locations across the street for a selected set of photon energies; the street being lined by buildings of height 150 ft.

The relative dose rate was evaluated for the radionuclides of FGR 12 (EPA 1993) using the nuclear decay data of ICRP Publication 38 (ICRP 1983, Eckerman *et al.* 1994) and the response indicated by the data of Table 1. The relative dose rate  $R$  for a radionuclide was computed as

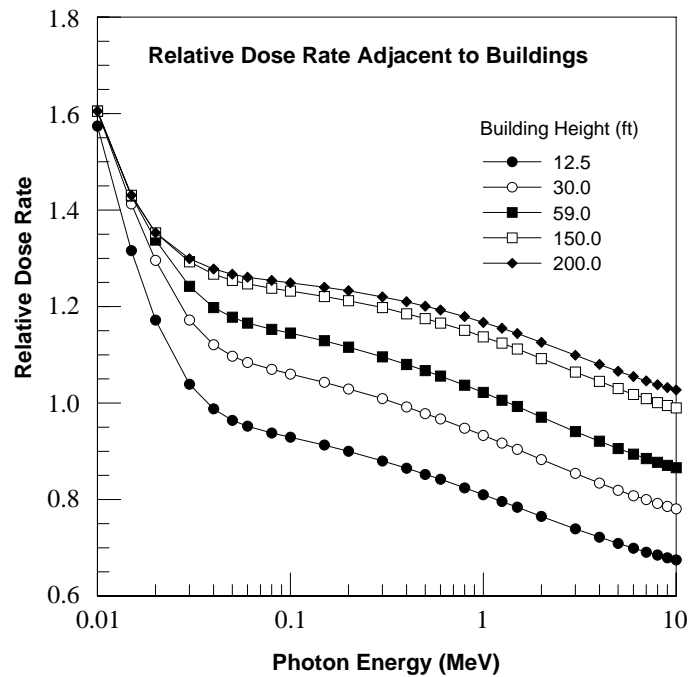
$$R = \frac{\sum_{i=1}^n Y(E_i) R(E_i) D_p(E_i, h)}{\sum_{i=1}^n Y(E_i) D_p(E_i, h)} \quad (4)$$

where  $Y(E_i)$  is yield of photons of energy  $E_i$  in the decay of the radionuclide (Eckerman *et al.*, 1994),  $R(E_i)$  is the relative dose rate for photons of energy  $E_i$  from Table 1, and  $D_p(E_i, h)$  is given by Eqn (3). Table 2 lists the relative dose rate coefficients for the radionuclides. If the radionuclide does not emit photons (e.g., H-3) then a zero value for

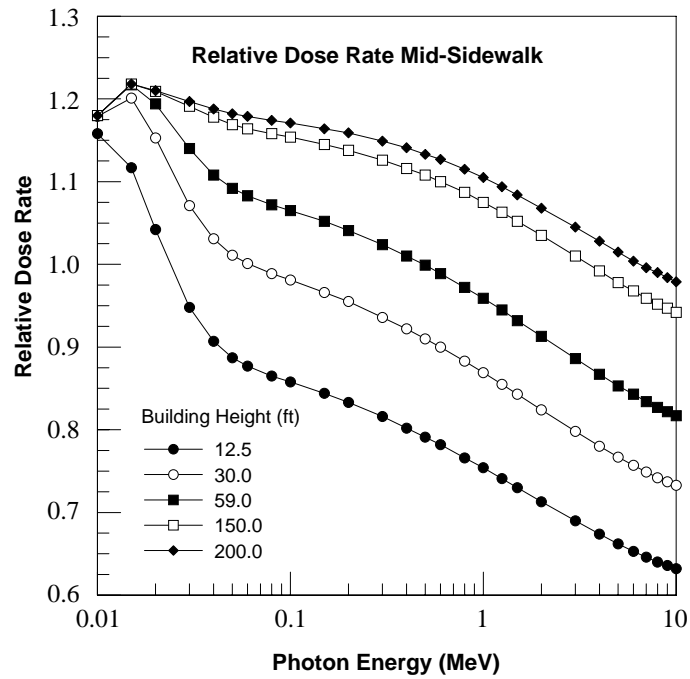
the ratio appears in the table. Radionuclides with “+D” appended to their name include the contribution from members of the decay chain (so-called daughters) to dose rate coefficient relative to the corresponding dose rate coefficient for the infinite planar distribution of the nuclide. These ratios reflect the status of the decay chain at 100 y, however they are normalized to a unit activity of the parent.

### Conclusion

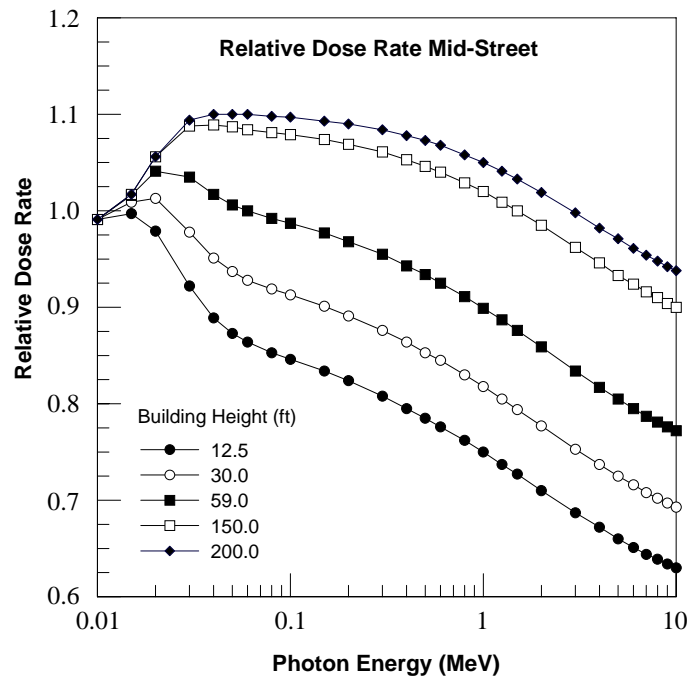
It is recommended that an applicable dose rate coefficient for the urban environment can be approximated by multiplying the external dose coefficients for the ground plane tabulated in FGR 12 (EPA 1993) by the relative dose ratio given in Table 2. This procedure should yield a conservative estimate of the dose rate.



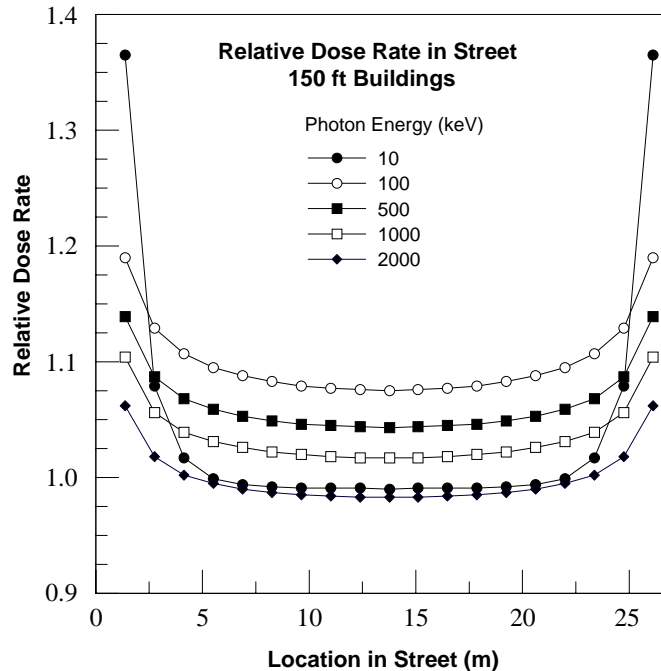
**Fig. 1. Relative photon dose rate adjacent to buildings of various heights as a function of photon energy.**



**Fig. 2. Relative photon dose rate at the middle of the sidewalk lined by buildings of various heights as a function of photon energy.**



**Fig. 3. Relative photon dose rate in middle of street lined with buildings of various heights as a function of photon energy.**



**Fig. 4. Relative dose rate as a function of distance across street for selected photon energies. Street lined with buildings of height 150 ft.**

### References

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**Table 1. Ratio of the dose rate on the sidewalk to that for an infinite plane source.**

Photon Energy (MeV)	Building Height (ft)														
	12.5			30.0			59.0			150.0			200.0		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
0.010	1.574	1.158	0.991	1.605	1.179	0.991	1.605	1.180	0.991	1.605	1.180	0.991	1.605	1.180	0.991
0.015	1.316	1.117	0.997	1.413	1.201	1.009	1.429	1.217	1.016	1.431	1.218	1.017	1.431	1.218	1.017
0.020	1.172	1.042	0.979	1.296	1.153	1.013	1.338	1.194	1.041	1.353	1.209	1.056	1.353	1.210	1.056
0.030	1.039	0.948	0.922	1.172	1.071	0.978	1.242	1.140	1.035	1.293	1.191	1.088	1.299	1.197	1.094
0.040	0.988	0.907	0.889	1.121	1.031	0.951	1.198	1.108	1.017	1.267	1.178	1.089	1.278	1.188	1.100
0.050	0.964	0.887	0.873	1.097	1.011	0.937	1.178	1.092	1.006	1.254	1.169	1.087	1.267	1.182	1.100
0.060	0.952	0.877	0.864	1.084	1.001	0.928	1.166	1.083	1.000	1.247	1.164	1.084	1.261	1.179	1.100
0.080	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
0.100	0.929	0.858	0.846	1.060	0.981	0.913	1.145	1.065	0.987	1.232	1.154	1.079	1.249	1.171	1.097
0.150	0.913	0.844	0.834	1.043	0.966	0.901	1.129	1.052	0.977	1.221	1.145	1.074	1.240	1.164	1.093
0.200	0.900	0.833	0.824	1.029	0.955	0.891	1.116	1.041	0.968	1.212	1.138	1.069	1.233	1.159	1.090
0.300	0.880	0.816	0.808	1.009	0.936	0.876	1.096	1.024	0.955	1.198	1.126	1.061	1.220	1.149	1.084
0.400	0.865	0.802	0.795	0.992	0.922	0.864	1.080	1.010	0.943	1.185	1.116	1.053	1.210	1.141	1.078
0.500	0.852	0.791	0.785	0.978	0.910	0.853	1.067	0.999	0.934	1.175	1.108	1.046	1.201	1.133	1.073
0.600	0.842	0.782	0.776	0.967	0.900	0.845	1.056	0.989	0.925	1.166	1.100	1.040	1.193	1.127	1.068
0.800	0.824	0.766	0.762	0.948	0.883	0.830	1.037	0.972	0.911	1.151	1.087	1.029	1.179	1.115	1.058
1.000	0.810	0.754	0.750	0.933	0.869	0.818	1.022	0.959	0.899	1.137	1.075	1.020	1.167	1.105	1.050
1.250	0.796	0.741	0.737	0.917	0.855	0.805	1.006	0.945	0.887	1.124	1.063	1.009	1.155	1.094	1.041
1.500	0.784	0.730	0.727	0.904	0.843	0.794	0.993	0.932	0.876	1.112	1.052	1.000	1.144	1.084	1.033
2.000	0.765	0.713	0.710	0.883	0.824	0.777	0.971	0.913	0.859	1.092	1.035	0.985	1.126	1.068	1.019
3.000	0.739	0.690	0.687	0.854	0.798	0.753	0.941	0.886	0.834	1.064	1.010	0.962	1.099	1.045	0.998
4.000	0.722	0.674	0.672	0.834	0.780	0.737	0.921	0.867	0.817	1.045	0.992	0.946	1.080	1.028	0.982
5.000	0.709	0.662	0.660	0.819	0.767	0.725	0.906	0.853	0.805	1.030	0.978	0.933	1.066	1.015	0.971
6.000	0.699	0.653	0.651	0.808	0.757	0.716	0.894	0.843	0.795	1.018	0.968	0.924	1.055	1.004	0.961
7.000	0.691	0.646	0.644	0.800	0.749	0.708	0.885	0.834	0.787	1.009	0.959	0.916	1.046	0.996	0.954
8.000	0.685	0.640	0.639	0.792	0.742	0.702	0.877	0.827	0.781	1.001	0.952	0.910	1.038	0.990	0.948
9.000	0.679	0.636	0.634	0.786	0.737	0.697	0.871	0.822	0.776	0.995	0.947	0.904	1.032	0.984	0.942
10.000	0.675	0.632	0.630	0.781	0.733	0.693	0.866	0.817	0.772	0.990	0.942	0.900	1.027	0.979	0.938

Location (1) - Adjacent to building; (2) - Middle of sidewalk; (3) - Middle of street.

Table 2. Nuclide Dose Rate Coefficient Relative to Infinite Plane Coefficient.

Nuclide	Building Height (ft)														
	12.5			30.0			59.0			150.0			200.0		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
H-3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Be-7	0.855	0.793	0.787	0.981	0.913	0.855	1.070	1.001	0.936	1.177	1.110	1.047	1.203	1.135	1.074
Be-10	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
C-11	0.851	0.790	0.784	0.977	0.909	0.852	1.066	0.998	0.933	1.174	1.107	1.045	1.200	1.132	1.072
N-13	0.851	0.790	0.784	0.977	0.909	0.852	1.066	0.998	0.933	1.174	1.107	1.045	1.200	1.132	1.072
C-14	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
O-15	0.851	0.790	0.784	0.977	0.909	0.852	1.066	0.998	0.933	1.174	1.107	1.045	1.200	1.132	1.072
F-18	0.851	0.790	0.784	0.977	0.909	0.852	1.066	0.998	0.933	1.174	1.107	1.045	1.200	1.132	1.072
Ne-19	0.851	0.790	0.784	0.977	0.909	0.852	1.066	0.998	0.933	1.174	1.107	1.045	1.200	1.132	1.072
Na-22	0.818	0.761	0.756	0.941	0.877	0.824	1.030	0.967	0.906	1.144	1.081	1.024	1.173	1.110	1.054
Na-24	0.761	0.710	0.706	0.878	0.820	0.773	0.966	0.909	0.855	1.087	1.031	0.981	1.121	1.064	1.015
Al-26	0.798	0.742	0.738	0.919	0.856	0.806	1.007	0.945	0.887	1.124	1.063	1.008	1.155	1.093	1.040
Al-28	0.773	0.720	0.717	0.892	0.832	0.784	0.980	0.921	0.866	1.100	1.042	0.991	1.133	1.075	1.025
Mg-28	0.816	0.758	0.753	0.938	0.873	0.821	1.026	0.962	0.901	1.139	1.076	1.018	1.168	1.105	1.048
Mg-28+D	0.862	0.824	0.822	0.938	0.900	0.869	0.989	0.955	0.921	1.053	1.023	0.995	1.069	1.040	1.014
P-30	0.851	0.790	0.784	0.977	0.909	0.852	1.066	0.998	0.933	1.174	1.107	1.045	1.200	1.132	1.072
Si-31	0.795	0.740	0.736	0.916	0.854	0.804	1.005	0.944	0.886	1.123	1.062	1.008	1.154	1.093	1.040
P-32	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Si-32	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Si-32+D	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.253	1.174	1.098
P-33	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
S-35	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Cl-36	0.851	0.790	0.784	0.977	0.909	0.852	1.066	0.998	0.933	1.174	1.107	1.045	1.200	1.132	1.072
Ar-37	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cl-38	0.767	0.714	0.711	0.885	0.826	0.778	0.973	0.914	0.860	1.094	1.036	0.986	1.127	1.069	1.020
K-38	0.791	0.736	0.732	0.911	0.850	0.799	0.999	0.938	0.881	1.116	1.056	1.003	1.148	1.087	1.035
Ar-39	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Cl-39	0.798	0.742	0.739	0.919	0.857	0.806	1.008	0.946	0.888	1.125	1.063	1.009	1.156	1.094	1.041
K-40	0.786	0.732	0.728	0.906	0.845	0.796	0.995	0.934	0.878	1.114	1.054	1.001	1.146	1.085	1.034
Ar-41	0.794	0.739	0.735	0.915	0.853	0.803	1.004	0.943	0.885	1.122	1.061	1.007	1.153	1.092	1.040
Ca-41	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K-42	0.783	0.729	0.726	0.903	0.842	0.793	0.992	0.931	0.875	1.111	1.051	0.999	1.143	1.083	1.032

K-43	0.850	0.789	0.783	0.976	0.908	0.852	1.065	0.997	0.932	1.173	1.106	1.045	1.199	1.132	1.071
Sc-43	0.855	0.794	0.787	0.982	0.913	0.856	1.070	1.002	0.936	1.177	1.110	1.048	1.203	1.135	1.074
K-44	0.773	0.720	0.717	0.892	0.832	0.784	0.980	0.921	0.865	1.099	1.041	0.990	1.132	1.074	1.023
Sc-44m	0.871	0.808	0.800	0.999	0.927	0.868	1.086	1.015	0.947	1.189	1.119	1.055	1.213	1.143	1.079
Sc-44m+D	0.841	0.788	0.784	0.953	0.895	0.846	1.032	0.974	0.920	1.129	1.074	1.024	1.154	1.098	1.050
Sc-44	0.823	0.765	0.761	0.947	0.882	0.829	1.036	0.971	0.910	1.149	1.085	1.027	1.178	1.113	1.057
Ti-44	0.942	0.868	0.856	1.074	0.992	0.922	1.157	1.075	0.994	1.241	1.160	1.082	1.256	1.175	1.099
Ti-44+D	0.832	0.776	0.772	0.950	0.888	0.838	1.034	0.973	0.915	1.139	1.080	1.025	1.166	1.106	1.054
Ca-45	1.430	1.141	0.996	1.500	1.197	1.002	1.506	1.207	1.003	1.505	1.206	1.002	1.505	1.206	1.002
K-45	0.780	0.727	0.723	0.900	0.839	0.790	0.988	0.928	0.872	1.107	1.047	0.995	1.139	1.079	1.028
K-45+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Ti-45	0.851	0.790	0.784	0.976	0.909	0.852	1.066	0.998	0.933	1.174	1.107	1.045	1.200	1.132	1.072
Sc-46	0.809	0.753	0.749	0.932	0.868	0.817	1.021	0.958	0.899	1.137	1.075	1.019	1.167	1.104	1.049
Ca-47	0.797	0.742	0.738	0.918	0.856	0.806	1.007	0.946	0.888	1.125	1.064	1.010	1.156	1.095	1.042
Ca-47+D	0.990	0.981	0.980	1.004	0.996	0.989	1.011	1.005	0.997	1.018	1.012	1.007	1.019	1.014	1.008
Sc-47	0.910	0.842	0.832	1.040	0.964	0.899	1.126	1.050	0.975	1.219	1.144	1.073	1.239	1.163	1.092
V-47	0.850	0.789	0.783	0.976	0.908	0.852	1.065	0.997	0.933	1.173	1.107	1.045	1.200	1.132	1.072
Cr-48	0.887	0.822	0.813	1.016	0.942	0.881	1.103	1.030	0.959	1.202	1.130	1.063	1.224	1.152	1.086
Cr-48+D	0.831	0.780	0.776	0.941	0.884	0.838	1.018	0.964	0.911	1.115	1.063	1.016	1.141	1.089	1.042
Sc-48	0.803	0.748	0.744	0.925	0.862	0.812	1.014	0.952	0.893	1.131	1.069	1.015	1.161	1.100	1.046
V-48	0.809	0.753	0.749	0.932	0.868	0.817	1.021	0.958	0.898	1.136	1.074	1.018	1.166	1.104	1.049
Ca-49	0.736	0.687	0.685	0.851	0.795	0.750	0.938	0.883	0.831	1.061	1.007	0.959	1.096	1.042	0.995
Ca-49+D	0.998	0.997	0.997	0.999	0.999	0.998	1.000	0.999	0.999	1.001	1.000	1.000	1.001	1.000	1.000
Cr-49	0.856	0.795	0.788	0.983	0.914	0.856	1.071	1.003	0.937	1.178	1.110	1.048	1.203	1.135	1.074
Cr-49+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Sc-49	0.774	0.721	0.718	0.893	0.833	0.785	0.982	0.922	0.867	1.102	1.043	0.992	1.135	1.076	1.026
V-49	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr-51	0.877	0.813	0.805	1.005	0.933	0.873	1.093	1.021	0.952	1.195	1.124	1.059	1.218	1.147	1.083
Mn-51	0.851	0.790	0.784	0.976	0.909	0.852	1.065	0.998	0.933	1.174	1.107	1.045	1.200	1.132	1.072
Mn-51+D	0.996	0.993	0.993	1.000	0.998	0.996	1.003	1.001	0.998	1.005	1.003	1.002	1.005	1.004	1.002
Fe-52	0.861	0.799	0.793	0.988	0.919	0.860	1.076	1.007	0.941	1.182	1.114	1.050	1.207	1.138	1.076
Fe-52+D	0.852	0.804	0.800	0.951	0.900	0.857	1.019	0.970	0.923	1.103	1.058	1.015	1.124	1.079	1.038
Mn-52m	0.814	0.757	0.752	0.936	0.872	0.820	1.025	0.961	0.901	1.140	1.077	1.020	1.169	1.106	1.051
Mn-52m+D	0.994	0.992	0.992	0.998	0.996	0.995	1.000	0.999	0.997	1.003	1.002	1.000	1.003	1.002	1.001
Mn-52	0.809	0.752	0.748	0.931	0.868	0.816	1.020	0.957	0.897	1.136	1.073	1.018	1.165	1.103	1.048
Mn-53	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mn-54	0.821	0.764	0.760	0.945	0.880	0.828	1.034	0.970	0.909	1.148	1.085	1.027	1.177	1.113	1.056
Co-55	0.826	0.768	0.763	0.950	0.884	0.831	1.039	0.974	0.912	1.151	1.087	1.029	1.180	1.115	1.058



Co-55+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Fe-55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Co-56	0.790	0.735	0.732	0.910	0.849	0.799	0.999	0.938	0.881	1.117	1.057	1.003	1.148	1.088	1.035
Mn-56	0.794	0.740	0.736	0.916	0.854	0.804	1.004	0.943	0.885	1.122	1.061	1.007	1.153	1.092	1.039
Ni-56	0.832	0.773	0.768	0.956	0.890	0.836	1.045	0.979	0.916	1.156	1.091	1.032	1.184	1.119	1.061
Ni-56+D	0.852	0.809	0.806	0.939	0.895	0.858	0.999	0.958	0.918	1.074	1.037	1.002	1.093	1.057	1.023
Co-57	1.000	0.902	0.869	1.123	1.016	0.926	1.195	1.088	0.987	1.268	1.162	1.064	1.282	1.177	1.079
Ni-57	0.800	0.744	0.740	0.921	0.859	0.808	1.010	0.948	0.890	1.126	1.065	1.011	1.157	1.095	1.042
Ni-57+D	1.000	0.993	0.990	1.008	1.001	0.995	1.011	1.005	0.999	1.014	1.009	1.004	1.014	1.009	1.004
Co-58m	1.092	0.988	0.951	1.223	1.109	1.000	1.282	1.167	1.039	1.317	1.200	1.077	1.320	1.203	1.080
Co-58m+D	0.827	0.769	0.764	0.951	0.886	0.832	1.040	0.975	0.913	1.153	1.089	1.031	1.181	1.117	1.060
Co-58	0.827	0.769	0.764	0.951	0.886	0.832	1.040	0.975	0.913	1.153	1.089	1.031	1.181	1.117	1.060
Fe-59	0.800	0.745	0.741	0.921	0.859	0.809	1.010	0.949	0.890	1.127	1.066	1.012	1.158	1.097	1.043
Ni-59	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Co-60m	0.831	0.771	0.765	0.954	0.888	0.832	1.042	0.975	0.912	1.151	1.085	1.025	1.178	1.112	1.053
Co-60m+D	0.796	0.741	0.737	0.917	0.855	0.805	1.006	0.945	0.887	1.124	1.063	1.009	1.155	1.094	1.041
Co-60	0.796	0.741	0.737	0.917	0.855	0.805	1.006	0.945	0.887	1.124	1.063	1.009	1.155	1.094	1.041
Cu-60	0.799	0.743	0.739	0.920	0.858	0.807	1.009	0.947	0.888	1.125	1.064	1.009	1.156	1.094	1.041
Fe-60	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Fe-60+D	0.831	0.771	0.765	0.954	0.888	0.832	1.042	0.975	0.912	1.151	1.085	1.025	1.178	1.112	1.053
Co-61	0.891	0.824	0.815	1.019	0.945	0.881	1.105	1.030	0.958	1.201	1.127	1.058	1.222	1.148	1.080
Cu-61	0.847	0.786	0.781	0.973	0.905	0.849	1.061	0.994	0.930	1.170	1.104	1.043	1.197	1.129	1.070
Co-62m	0.791	0.737	0.733	0.912	0.850	0.801	1.001	0.940	0.883	1.119	1.059	1.006	1.151	1.090	1.038
Cu-62	0.850	0.790	0.784	0.976	0.908	0.852	1.065	0.997	0.933	1.174	1.107	1.045	1.200	1.132	1.072
Zn-62	0.854	0.792	0.786	0.980	0.911	0.854	1.068	1.000	0.934	1.175	1.108	1.045	1.201	1.133	1.072
Zn-62+D	0.890	0.842	0.838	0.983	0.933	0.891	1.045	0.998	0.952	1.117	1.073	1.031	1.133	1.089	1.050
Ni-63	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Zn-63	0.846	0.786	0.780	0.971	0.904	0.848	1.060	0.993	0.929	1.169	1.103	1.042	1.196	1.129	1.070
Cu-64	0.849	0.788	0.782	0.974	0.907	0.850	1.063	0.996	0.931	1.172	1.105	1.044	1.198	1.131	1.071
Ga-65	0.850	0.789	0.783	0.976	0.908	0.851	1.064	0.996	0.932	1.172	1.105	1.044	1.198	1.131	1.071
Ga-65+D	0.929	0.905	0.903	0.976	0.953	0.933	1.005	0.985	0.964	1.038	1.021	1.005	1.046	1.030	1.014
Ni-65	0.793	0.738	0.735	0.914	0.852	0.802	1.003	0.941	0.884	1.121	1.060	1.007	1.152	1.091	1.039
Zn-65	0.804	0.749	0.745	0.927	0.863	0.813	1.016	0.953	0.894	1.132	1.070	1.016	1.162	1.101	1.046
Cu-66	0.808	0.752	0.748	0.931	0.867	0.816	1.020	0.957	0.897	1.135	1.073	1.018	1.165	1.103	1.049
Ga-66	0.784	0.730	0.726	0.903	0.842	0.793	0.991	0.931	0.874	1.108	1.049	0.996	1.140	1.081	1.029
Ge-66	0.871	0.803	0.793	0.996	0.920	0.860	1.082	1.007	0.938	1.186	1.112	1.047	1.211	1.136	1.072
Ge-66+D	0.828	0.781	0.778	0.925	0.876	0.835	0.993	0.947	0.901	1.080	1.037	0.997	1.103	1.061	1.022
Ni-66	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098

Ni-66+D	0.808	0.752	0.748	0.931	0.867	0.816	1.020	0.957	0.897	1.135	1.073	1.018	1.165	1.103	1.049
Cu-67	0.907	0.839	0.830	1.037	0.961	0.897	1.123	1.047	0.973	1.217	1.142	1.072	1.237	1.162	1.092
Ga-67	0.894	0.828	0.819	1.023	0.949	0.886	1.110	1.035	0.964	1.207	1.134	1.066	1.228	1.155	1.087
Ge-67	0.843	0.783	0.777	0.968	0.901	0.845	1.057	0.990	0.926	1.166	1.100	1.039	1.193	1.126	1.067
Ge-67+D	0.988	0.980	0.979	1.002	0.995	0.988	1.010	1.003	0.996	1.017	1.012	1.006	1.018	1.013	1.008
Ga-68	0.849	0.788	0.782	0.974	0.907	0.850	1.063	0.996	0.931	1.172	1.105	1.044	1.198	1.131	1.071
Ge-68	1.558	1.157	0.992	1.593	1.182	0.992	1.594	1.183	0.992	1.593	1.183	0.992	1.593	1.183	0.992
Ge-68+D	0.849	0.788	0.782	0.974	0.907	0.850	1.063	0.996	0.931	1.172	1.105	1.044	1.198	1.131	1.071
As-69	0.852	0.791	0.785	0.978	0.910	0.853	1.067	0.999	0.934	1.175	1.108	1.046	1.201	1.133	1.073
As-69+D	0.918	0.883	0.880	0.980	0.947	0.918	1.019	0.989	0.960	1.065	1.038	1.013	1.075	1.049	1.025
Ge-69	0.833	0.772	0.766	0.956	0.888	0.833	1.044	0.976	0.914	1.156	1.089	1.030	1.184	1.116	1.058
Zn-69m	0.860	0.797	0.791	0.986	0.917	0.860	1.075	1.006	0.939	1.181	1.113	1.050	1.206	1.138	1.076
Zn-69m+D	0.999	0.998	0.998	1.000	0.999	0.999	1.000	1.000	0.999	1.001	1.001	1.000	1.001	1.001	1.001
Zn-69	0.855	0.793	0.787	0.981	0.912	0.855	1.069	1.000	0.935	1.176	1.108	1.046	1.201	1.134	1.072
As-70	0.812	0.755	0.751	0.934	0.870	0.818	1.023	0.960	0.900	1.138	1.075	1.019	1.167	1.104	1.049
Ga-70	0.813	0.757	0.752	0.936	0.872	0.820	1.025	0.962	0.901	1.139	1.077	1.021	1.169	1.106	1.051
Se-70	0.936	0.837	0.813	1.053	0.946	0.873	1.131	1.025	0.944	1.225	1.120	1.042	1.247	1.141	1.065
Se-70+D	0.847	0.797	0.793	0.948	0.895	0.850	1.018	0.968	0.919	1.106	1.059	1.015	1.127	1.081	1.039
As-71	0.870	0.803	0.793	0.995	0.920	0.860	1.082	1.007	0.938	1.186	1.112	1.047	1.210	1.136	1.072
As-71+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Ge-71	1.558	1.157	0.992	1.593	1.182	0.992	1.594	1.183	0.992	1.593	1.183	0.992	1.593	1.183	0.992
Zn-71m	0.846	0.786	0.780	0.972	0.904	0.848	1.060	0.993	0.928	1.169	1.103	1.042	1.196	1.129	1.069
As-72	0.832	0.773	0.768	0.957	0.890	0.836	1.045	0.979	0.917	1.157	1.092	1.033	1.185	1.119	1.061
Ga-72	0.791	0.737	0.733	0.912	0.850	0.800	1.000	0.939	0.882	1.118	1.058	1.004	1.149	1.089	1.036
Zn-72	1.004	0.898	0.866	1.124	1.010	0.921	1.197	1.082	0.984	1.271	1.157	1.063	1.286	1.172	1.078
Zn-72+D	0.802	0.749	0.745	0.917	0.858	0.809	1.000	0.942	0.888	1.110	1.055	1.004	1.139	1.084	1.034
As-73	1.417	1.106	0.972	1.479	1.157	0.985	1.495	1.174	0.997	1.508	1.187	1.011	1.510	1.190	1.013
Ga-73	0.907	0.829	0.813	1.031	0.944	0.878	1.114	1.028	0.953	1.212	1.126	1.055	1.233	1.148	1.077
Se-73m	0.908	0.822	0.803	1.028	0.934	0.865	1.109	1.015	0.939	1.207	1.115	1.041	1.231	1.138	1.065
Se-73m+D	0.920	0.855	0.842	1.015	0.948	0.895	1.076	1.012	0.955	1.148	1.087	1.035	1.164	1.104	1.053
Se-73	0.894	0.816	0.802	1.017	0.931	0.866	1.100	1.015	0.942	1.201	1.117	1.047	1.225	1.140	1.071
Se-73+D	1.002	1.001	1.000	1.002	1.001	1.000	1.002	1.001	1.000	1.002	1.001	1.000	1.002	1.001	1.000
As-74	0.849	0.787	0.780	0.974	0.905	0.848	1.062	0.993	0.928	1.171	1.103	1.041	1.197	1.129	1.069
Br-74m	0.805	0.748	0.744	0.926	0.863	0.811	1.014	0.951	0.892	1.129	1.067	1.011	1.159	1.097	1.042
Br-74	0.784	0.729	0.725	0.902	0.841	0.791	0.990	0.929	0.872	1.107	1.047	0.994	1.139	1.079	1.026
Kr-74	0.873	0.805	0.795	0.998	0.922	0.861	1.084	1.009	0.939	1.188	1.114	1.047	1.212	1.137	1.073
Kr-74+D	0.827	0.779	0.775	0.923	0.874	0.832	0.992	0.945	0.899	1.080	1.036	0.995	1.104	1.060	1.020
Br-75	0.871	0.803	0.793	0.996	0.920	0.859	1.082	1.007	0.938	1.187	1.112	1.046	1.211	1.136	1.072

Br-75+D	1.013	0.974	0.961	1.037	1.001	0.976	1.049	1.017	0.993	1.061	1.032	1.011	1.063	1.035	1.014
Ge-75	0.888	0.821	0.812	1.016	0.941	0.880	1.103	1.028	0.958	1.203	1.129	1.062	1.225	1.151	1.085
Se-75	1.048	0.906	0.860	1.156	1.005	0.911	1.222	1.071	0.970	1.296	1.146	1.047	1.312	1.162	1.064
As-76	0.829	0.770	0.765	0.953	0.887	0.833	1.042	0.976	0.914	1.154	1.089	1.031	1.182	1.117	1.060
Br-76	0.815	0.754	0.747	0.935	0.867	0.813	1.022	0.954	0.893	1.135	1.068	1.011	1.165	1.098	1.041
Kr-76	1.020	0.895	0.851	1.132	0.997	0.903	1.198	1.064	0.962	1.275	1.142	1.042	1.292	1.159	1.060
Kr-76+D	0.842	0.786	0.779	0.945	0.886	0.838	1.018	0.961	0.908	1.111	1.057	1.009	1.136	1.082	1.035
As-77	0.889	0.819	0.808	1.015	0.937	0.874	1.101	1.023	0.952	1.201	1.124	1.056	1.224	1.147	1.080
Br-77	1.021	0.887	0.842	1.129	0.986	0.893	1.195	1.053	0.952	1.274	1.132	1.034	1.293	1.151	1.054
Ge-77	0.841	0.780	0.774	0.965	0.898	0.842	1.054	0.986	0.922	1.163	1.096	1.036	1.190	1.123	1.064
Ge-77+D	0.999	0.998	0.998	1.000	0.999	0.999	1.001	1.000	1.000	1.002	1.001	1.000	1.002	1.001	1.001
Kr-77	0.884	0.811	0.799	1.007	0.928	0.864	1.093	1.013	0.941	1.194	1.116	1.047	1.218	1.139	1.072
Kr-77+D	1.005	0.969	0.956	1.030	0.997	0.972	1.043	1.012	0.988	1.056	1.029	1.008	1.059	1.032	1.012
Se-77m	1.152	0.970	0.900	1.250	1.058	0.940	1.302	1.111	0.984	1.355	1.165	1.041	1.367	1.177	1.052
As-78	0.808	0.751	0.747	0.930	0.866	0.815	1.019	0.956	0.896	1.134	1.072	1.016	1.164	1.102	1.047
Ge-78	0.885	0.820	0.811	1.014	0.940	0.879	1.101	1.028	0.958	1.201	1.129	1.063	1.223	1.151	1.085
Ge-78+D	0.839	0.789	0.785	0.943	0.889	0.845	1.015	0.964	0.914	1.106	1.058	1.013	1.129	1.081	1.038
Kr-79	1.035	0.900	0.850	1.143	0.998	0.899	1.206	1.062	0.955	1.280	1.137	1.032	1.298	1.155	1.051
Rb-79	0.882	0.810	0.796	1.005	0.925	0.861	1.090	1.010	0.937	1.192	1.113	1.043	1.216	1.137	1.068
Rb-79+D	1.006	0.982	0.972	1.022	1.000	0.982	1.030	1.010	0.993	1.037	1.019	1.005	1.039	1.021	1.007
Se-79	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Br-80m	1.378	1.108	0.980	1.453	1.170	0.994	1.470	1.189	1.005	1.479	1.200	1.015	1.481	1.201	1.016
Br-80m+D	0.907	0.835	0.817	1.007	0.933	0.874	1.076	1.004	0.940	1.160	1.092	1.032	1.181	1.113	1.055
Br-80	0.889	0.809	0.792	1.009	0.922	0.856	1.092	1.005	0.931	1.194	1.108	1.037	1.219	1.132	1.063
Rb-80	0.850	0.789	0.782	0.975	0.907	0.851	1.064	0.996	0.931	1.173	1.106	1.044	1.199	1.131	1.071
Sr-80	1.375	1.131	0.997	1.458	1.200	1.006	1.468	1.213	1.009	1.468	1.214	1.009	1.468	1.214	1.009
Sr-80+D	0.850	0.789	0.782	0.975	0.907	0.851	1.064	0.996	0.931	1.173	1.106	1.044	1.199	1.131	1.071
Kr-81m	1.037	0.915	0.871	1.152	1.021	0.922	1.217	1.087	0.979	1.287	1.158	1.053	1.303	1.173	1.068
Kr-81	1.425	1.130	0.988	1.492	1.184	0.995	1.501	1.196	1.000	1.504	1.200	1.003	1.505	1.201	1.004
Rb-81m	1.362	1.123	0.993	1.447	1.194	1.003	1.459	1.209	1.009	1.461	1.212	1.011	1.462	1.212	1.011
Rb-81m+D	0.953	0.856	0.827	1.070	0.965	0.884	1.144	1.040	0.950	1.230	1.128	1.042	1.251	1.148	1.063
Rb-81	0.953	0.855	0.826	1.071	0.965	0.883	1.146	1.040	0.950	1.233	1.129	1.042	1.254	1.149	1.063
Se-81m	1.433	1.120	0.979	1.494	1.170	0.989	1.506	1.183	0.997	1.514	1.192	1.005	1.516	1.193	1.007
Se-81m+D	0.924	0.879	0.868	0.991	0.950	0.911	1.036	1.001	0.960	1.091	1.062	1.029	1.104	1.077	1.044
Se-81	0.856	0.794	0.788	0.982	0.913	0.856	1.070	1.001	0.935	1.177	1.109	1.047	1.202	1.134	1.072
Sr-81	0.860	0.796	0.788	0.985	0.914	0.855	1.073	1.002	0.934	1.179	1.109	1.044	1.204	1.133	1.071
Sr-81+D	0.984	0.949	0.938	1.022	0.989	0.960	1.042	1.012	0.984	1.063	1.037	1.012	1.068	1.042	1.018
Br-82	0.821	0.763	0.758	0.944	0.879	0.827	1.033	0.968	0.908	1.147	1.083	1.026	1.175	1.112	1.055

Rb-82m	0.840	0.775	0.766	0.962	0.890	0.833	1.048	0.977	0.911	1.158	1.088	1.026	1.186	1.115	1.054
Rb-82	0.850	0.789	0.782	0.976	0.907	0.850	1.064	0.996	0.931	1.173	1.105	1.043	1.199	1.131	1.070
Sr-82	1.375	1.131	0.997	1.458	1.200	1.006	1.468	1.213	1.009	1.468	1.214	1.009	1.468	1.214	1.009
Sr-82+D	0.850	0.789	0.782	0.976	0.907	0.850	1.064	0.996	0.931	1.173	1.105	1.043	1.199	1.131	1.070
Br-83	0.849	0.788	0.782	0.975	0.907	0.850	1.064	0.996	0.931	1.172	1.106	1.044	1.199	1.131	1.071
Br-83+D	1.010	1.004	1.000	1.010	1.005	1.000	1.010	1.004	1.000	1.009	1.004	1.000	1.009	1.004	1.000
Kr-83m	1.411	1.138	0.996	1.485	1.198	1.003	1.493	1.209	1.005	1.492	1.209	1.005	1.492	1.209	1.005
Rb-83	0.959	0.856	0.824	1.074	0.964	0.880	1.147	1.037	0.946	1.235	1.126	1.036	1.256	1.146	1.058
Rb-83+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Se-83	0.815	0.757	0.753	0.937	0.873	0.821	1.026	0.962	0.902	1.140	1.077	1.020	1.169	1.106	1.050
Se-83+D	0.999	0.999	0.999	1.000	1.000	0.999	1.000	1.000	1.000	1.001	1.000	1.000	1.001	1.001	1.000
Sr-83	0.930	0.838	0.810	1.047	0.947	0.867	1.122	1.022	0.934	1.213	1.114	1.029	1.236	1.137	1.052
Sr-83+D	0.983	0.938	0.923	1.028	0.986	0.949	1.053	1.014	0.978	1.081	1.046	1.014	1.087	1.052	1.022
Br-84	0.773	0.720	0.717	0.891	0.832	0.784	0.979	0.920	0.865	1.099	1.041	0.989	1.131	1.073	1.022
Rb-84	0.876	0.800	0.784	0.996	0.912	0.847	1.078	0.995	0.921	1.181	1.099	1.028	1.207	1.124	1.055
Kr-85m	0.949	0.863	0.842	1.074	0.979	0.903	1.153	1.059	0.973	1.239	1.146	1.064	1.257	1.164	1.082
Kr-85m+D	0.999	0.999	0.999	1.000	1.000	0.999	1.000	1.000	1.000	1.001	1.000	1.000	1.001	1.001	1.000
Kr-85	0.851	0.790	0.784	0.977	0.909	0.852	1.066	0.998	0.933	1.174	1.107	1.045	1.200	1.132	1.072
Sr-85m	0.938	0.856	0.836	1.063	0.973	0.898	1.143	1.053	0.969	1.232	1.142	1.062	1.251	1.162	1.081
Sr-85m+D	0.970	0.900	0.876	1.049	0.978	0.918	1.095	1.027	0.964	1.147	1.084	1.025	1.159	1.096	1.039
Sr-85	0.957	0.859	0.827	1.074	0.968	0.883	1.147	1.041	0.948	1.233	1.129	1.038	1.254	1.149	1.059
Rb-86	0.805	0.750	0.746	0.928	0.864	0.814	1.017	0.955	0.895	1.133	1.071	1.017	1.163	1.101	1.047
Y-86m	0.906	0.835	0.822	1.033	0.955	0.887	1.117	1.038	0.961	1.212	1.134	1.061	1.233	1.155	1.082
Y-86m+D	0.830	0.773	0.765	0.945	0.882	0.829	1.027	0.964	0.905	1.132	1.070	1.015	1.159	1.097	1.043
Y-86	0.821	0.761	0.753	0.942	0.875	0.820	1.029	0.962	0.899	1.142	1.075	1.016	1.171	1.104	1.046
Zr-86	1.101	0.971	0.908	1.215	1.074	0.948	1.267	1.126	0.990	1.317	1.175	1.042	1.327	1.186	1.052
Zr-86+D	0.835	0.777	0.769	0.947	0.884	0.832	1.026	0.965	0.906	1.129	1.069	1.015	1.155	1.095	1.043
Kr-87	0.793	0.738	0.733	0.913	0.851	0.801	1.001	0.940	0.882	1.117	1.057	1.003	1.148	1.088	1.034
Rb-87	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Sr-87m	0.900	0.826	0.810	1.025	0.943	0.875	1.107	1.026	0.949	1.205	1.124	1.051	1.228	1.147	1.074
Y-87	0.966	0.868	0.835	1.084	0.978	0.890	1.155	1.050	0.953	1.238	1.134	1.039	1.258	1.153	1.060
Y-87+D	0.958	0.922	0.913	1.010	0.976	0.945	1.040	1.010	0.978	1.074	1.047	1.021	1.082	1.056	1.029
Kr-88	0.778	0.723	0.719	0.896	0.835	0.785	0.983	0.923	0.866	1.102	1.042	0.989	1.135	1.074	1.022
Kr-88+D	0.931	0.910	0.908	0.971	0.951	0.934	0.996	0.979	0.963	1.025	1.012	0.998	1.032	1.019	1.007
Nb-88	0.838	0.777	0.770	0.962	0.893	0.837	1.049	0.981	0.916	1.159	1.091	1.030	1.186	1.119	1.058
Nb-88+D	0.924	0.889	0.883	0.981	0.947	0.917	1.015	0.985	0.954	1.055	1.029	1.003	1.066	1.039	1.015
Rb-88	0.777	0.724	0.721	0.897	0.836	0.788	0.985	0.925	0.870	1.104	1.046	0.994	1.137	1.078	1.027
Y-88	0.813	0.751	0.742	0.932	0.862	0.806	1.017	0.948	0.884	1.129	1.061	1.002	1.160	1.091	1.032

Zr-88	0.984	0.886	0.849	1.104	0.997	0.903	1.173	1.066	0.963	1.250	1.144	1.044	1.269	1.162	1.062
Zr-88+D	0.838	0.781	0.772	0.942	0.880	0.830	1.014	0.955	0.899	1.108	1.052	1.002	1.134	1.077	1.027
Nb-89b	0.827	0.767	0.760	0.949	0.882	0.826	1.036	0.969	0.905	1.147	1.081	1.020	1.175	1.108	1.049
Nb-89b+D	0.931	0.892	0.884	0.993	0.955	0.921	1.031	0.996	0.960	1.073	1.042	1.012	1.083	1.053	1.024
Nb-89a	0.855	0.792	0.784	0.980	0.910	0.852	1.068	0.998	0.931	1.175	1.106	1.043	1.201	1.132	1.070
Nb-89a+D	0.944	0.912	0.905	0.994	0.964	0.935	1.024	0.997	0.968	1.058	1.034	1.010	1.066	1.042	1.019
Rb-89	0.788	0.734	0.730	0.908	0.847	0.798	0.997	0.936	0.879	1.115	1.055	1.002	1.147	1.087	1.034
Rb-89+D	0.999	0.998	0.998	1.000	0.999	0.999	1.000	1.000	0.999	1.001	1.000	1.000	1.001	1.001	1.000
Sr-89	0.817	0.760	0.756	0.940	0.875	0.823	1.029	0.965	0.904	1.143	1.080	1.024	1.172	1.109	1.053
Zr-89	0.863	0.794	0.780	0.985	0.908	0.843	1.068	0.991	0.918	1.172	1.096	1.027	1.198	1.122	1.054
Mo-90	0.929	0.849	0.825	1.052	0.964	0.884	1.129	1.040	0.952	1.216	1.127	1.043	1.237	1.148	1.064
Mo-90+D	0.832	0.780	0.774	0.933	0.879	0.831	1.005	0.952	0.900	1.096	1.046	1.000	1.121	1.071	1.026
Nb-90	0.800	0.742	0.736	0.919	0.855	0.801	1.006	0.942	0.881	1.120	1.057	1.000	1.151	1.088	1.032
Sr-90	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Sr-90+D	1.274	1.101	0.995	1.375	1.192	1.010	1.396	1.210	1.022	1.399	1.212	1.024	1.399	1.211	1.024
Y-90m	0.878	0.812	0.802	1.004	0.931	0.868	1.091	1.017	0.946	1.193	1.120	1.052	1.216	1.143	1.077
Y-90m+D	1.009	1.004	1.000	1.011	1.006	1.000	1.011	1.006	1.001	1.010	1.006	1.001	1.010	1.005	1.001
Y-90	1.280	1.103	0.995	1.384	1.196	1.010	1.406	1.215	1.022	1.410	1.217	1.025	1.410	1.217	1.025
Sr-91	0.817	0.760	0.756	0.940	0.876	0.824	1.029	0.965	0.905	1.144	1.081	1.024	1.173	1.110	1.054
Sr-91+D	0.946	0.920	0.917	0.992	0.968	0.946	1.019	0.998	0.976	1.049	1.031	1.013	1.055	1.038	1.021
Y-91m	0.852	0.790	0.782	0.977	0.908	0.850	1.065	0.996	0.930	1.173	1.105	1.042	1.199	1.131	1.069
Y-91m+D	0.994	0.991	0.991	0.998	0.996	0.994	1.000	0.999	0.997	1.003	1.002	1.000	1.004	1.002	1.001
Y-91	0.798	0.743	0.739	0.920	0.857	0.807	1.009	0.947	0.889	1.126	1.065	1.011	1.157	1.096	1.043
Sr-92	0.792	0.737	0.733	0.912	0.851	0.801	1.001	0.940	0.883	1.120	1.059	1.006	1.151	1.090	1.038
Sr-92+D	0.959	0.944	0.943	0.987	0.974	0.962	1.004	0.992	0.980	1.022	1.013	1.003	1.026	1.017	1.008
Y-92	0.810	0.754	0.750	0.933	0.869	0.818	1.022	0.958	0.899	1.137	1.075	1.019	1.167	1.104	1.049
Mo-93m	0.813	0.755	0.750	0.935	0.870	0.816	1.023	0.958	0.897	1.137	1.072	1.015	1.166	1.102	1.045
Mo-93	1.252	1.090	0.993	1.362	1.189	1.011	1.389	1.211	1.027	1.395	1.216	1.032	1.395	1.216	1.032
Nb-93m	1.252	1.090	0.993	1.362	1.189	1.011	1.389	1.211	1.027	1.395	1.216	1.032	1.395	1.216	1.032
Tc-93m	0.820	0.759	0.749	0.940	0.871	0.813	1.023	0.955	0.889	1.132	1.065	1.002	1.161	1.093	1.032
Tc-93m+D	0.882	0.836	0.828	0.965	0.917	0.875	1.018	0.974	0.929	1.083	1.043	1.004	1.099	1.060	1.022
Tc-93	0.826	0.763	0.752	0.945	0.875	0.816	1.029	0.959	0.892	1.138	1.069	1.006	1.167	1.098	1.036
Y-93	0.808	0.751	0.747	0.930	0.866	0.814	1.018	0.955	0.895	1.132	1.070	1.014	1.162	1.099	1.044
Zr-93	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nb-94	0.825	0.767	0.762	0.949	0.884	0.831	1.038	0.973	0.911	1.151	1.087	1.029	1.179	1.116	1.058
Ru-94	0.916	0.839	0.819	1.040	0.955	0.880	1.118	1.033	0.948	1.207	1.123	1.041	1.228	1.144	1.063
Ru-94+D	0.865	0.814	0.809	0.964	0.910	0.865	1.031	0.980	0.930	1.113	1.065	1.020	1.133	1.086	1.042
Tc-94m	0.830	0.770	0.764	0.953	0.886	0.831	1.041	0.974	0.911	1.152	1.086	1.026	1.180	1.114	1.055

Tc-94	0.841	0.779	0.772	0.965	0.896	0.838	1.051	0.982	0.916	1.160	1.092	1.029	1.187	1.119	1.057
Y-94	0.806	0.750	0.746	0.928	0.865	0.814	1.017	0.954	0.895	1.133	1.071	1.016	1.163	1.101	1.046
Nb-95m	1.123	0.996	0.930	1.240	1.103	0.966	1.288	1.148	1.004	1.328	1.186	1.044	1.335	1.194	1.052
Nb-95m+D	0.841	0.786	0.780	0.955	0.895	0.844	1.036	0.977	0.919	1.139	1.081	1.029	1.164	1.107	1.055
Nb-95	0.827	0.769	0.764	0.951	0.886	0.832	1.040	0.975	0.913	1.154	1.089	1.031	1.181	1.117	1.060
Tc-95m	0.906	0.831	0.812	1.030	0.946	0.872	1.108	1.025	0.942	1.201	1.118	1.038	1.223	1.140	1.061
Tc-95m+D	0.994	0.990	0.989	1.000	0.997	0.993	1.004	1.000	0.997	1.007	1.004	1.001	1.008	1.005	1.002
Tc-95	0.883	0.812	0.796	1.006	0.927	0.857	1.087	1.007	0.929	1.185	1.106	1.031	1.209	1.130	1.056
Y-95	0.764	0.712	0.709	0.882	0.823	0.776	0.970	0.912	0.857	1.090	1.033	0.983	1.124	1.066	1.017
Y-95+D	0.880	0.835	0.832	0.968	0.923	0.884	1.027	0.984	0.942	1.096	1.057	1.020	1.112	1.074	1.039
Zr-95	0.829	0.770	0.766	0.953	0.888	0.834	1.042	0.977	0.915	1.155	1.091	1.032	1.183	1.118	1.061
Zr-95+D	0.904	0.868	0.864	0.975	0.939	0.907	1.020	0.987	0.954	1.073	1.043	1.016	1.085	1.056	1.030
Nb-96	0.823	0.765	0.760	0.946	0.881	0.828	1.035	0.971	0.909	1.149	1.085	1.027	1.177	1.113	1.057
Tc-96m	1.050	0.942	0.894	1.171	1.053	0.937	1.228	1.108	0.984	1.280	1.160	1.037	1.291	1.172	1.049
Tc-96m+D	0.845	0.784	0.776	0.966	0.898	0.840	1.051	0.982	0.917	1.156	1.090	1.027	1.183	1.115	1.055
Tc-96	0.842	0.780	0.772	0.965	0.896	0.837	1.052	0.982	0.915	1.160	1.092	1.028	1.187	1.118	1.056
Nb-97m	0.830	0.771	0.767	0.955	0.889	0.835	1.043	0.977	0.915	1.156	1.091	1.032	1.184	1.119	1.061
Nb-97m+D	0.914	0.879	0.876	0.981	0.947	0.917	1.023	0.992	0.960	1.071	1.044	1.017	1.082	1.055	1.030
Nb-97	0.836	0.777	0.771	0.961	0.895	0.840	1.050	0.983	0.920	1.161	1.096	1.036	1.188	1.123	1.065
Ru-97	1.018	0.922	0.886	1.143	1.037	0.937	1.209	1.102	0.993	1.272	1.165	1.058	1.285	1.178	1.071
Ru-97+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Tc-97m	1.202	1.061	0.985	1.321	1.168	1.012	1.357	1.201	1.037	1.368	1.212	1.047	1.368	1.212	1.047
Tc-97	1.226	1.076	0.989	1.341	1.179	1.012	1.372	1.207	1.033	1.381	1.214	1.040	1.380	1.214	1.039
Zr-97	0.815	0.758	0.753	0.938	0.873	0.821	1.026	0.963	0.902	1.141	1.078	1.021	1.170	1.107	1.051
Zr-97+D	0.850	0.796	0.791	0.963	0.904	0.854	1.041	0.982	0.927	1.137	1.081	1.030	1.160	1.105	1.055
Nb-98	0.814	0.757	0.753	0.937	0.873	0.821	1.026	0.962	0.902	1.141	1.078	1.021	1.170	1.107	1.051
Tc-98	0.833	0.774	0.769	0.957	0.891	0.837	1.046	0.980	0.918	1.158	1.093	1.034	1.186	1.121	1.063
Mo-99	0.856	0.792	0.783	0.980	0.909	0.850	1.066	0.995	0.927	1.172	1.102	1.037	1.198	1.128	1.063
Mo-99+D	0.980	0.943	0.933	1.034	0.998	0.964	1.063	1.030	0.995	1.088	1.059	1.028	1.093	1.064	1.034
Rh-99m	0.890	0.819	0.804	1.015	0.935	0.867	1.096	1.017	0.939	1.191	1.112	1.038	1.214	1.136	1.062
Rh-99	0.920	0.844	0.825	1.046	0.961	0.885	1.124	1.039	0.954	1.211	1.127	1.045	1.232	1.147	1.066
Tc-99m	0.954	0.875	0.856	1.083	0.995	0.918	1.162	1.074	0.987	1.242	1.155	1.071	1.259	1.172	1.087
Tc-99	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Pd-100	1.100	0.989	0.942	1.227	1.104	0.987	1.282	1.158	1.027	1.318	1.194	1.065	1.323	1.199	1.070
Pd-100+D	0.817	0.760	0.753	0.932	0.870	0.817	1.015	0.953	0.893	1.122	1.061	1.006	1.150	1.090	1.035
Rh-100	0.809	0.751	0.744	0.929	0.864	0.810	1.016	0.951	0.889	1.128	1.064	1.006	1.158	1.094	1.037
Mo-101	0.809	0.752	0.747	0.931	0.867	0.815	1.019	0.955	0.895	1.134	1.071	1.015	1.163	1.101	1.045
Mo-101+D	0.970	0.953	0.950	1.001	0.985	0.970	1.018	1.004	0.989	1.035	1.023	1.011	1.039	1.027	1.016



Ag-108	0.880	0.813	0.801	1.006	0.931	0.866	1.090	1.014	0.940	1.188	1.114	1.043	1.212	1.137	1.068
Ag-109m	1.121	1.007	0.961	1.249	1.124	1.005	1.301	1.176	1.039	1.329	1.202	1.068	1.331	1.205	1.070
Cd-109	1.125	1.011	0.964	1.254	1.128	1.007	1.305	1.179	1.040	1.331	1.204	1.068	1.333	1.206	1.069
In-109	0.880	0.813	0.801	1.005	0.930	0.866	1.089	1.014	0.939	1.186	1.111	1.041	1.209	1.135	1.065
In-109+D	1.003	1.000	0.999	1.005	1.003	1.000	1.005	1.003	1.001	1.005	1.004	1.001	1.005	1.004	1.001
Pd-109	1.118	1.005	0.959	1.246	1.122	1.003	1.299	1.174	1.037	1.327	1.201	1.068	1.330	1.204	1.070
Ag-110m	0.818	0.760	0.756	0.941	0.876	0.824	1.030	0.966	0.905	1.144	1.081	1.024	1.173	1.110	1.054
Ag-110m+	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Ag-110	0.839	0.779	0.773	0.964	0.897	0.842	1.052	0.985	0.921	1.162	1.096	1.036	1.190	1.124	1.064
In-110b	0.833	0.773	0.768	0.957	0.890	0.835	1.045	0.978	0.914	1.155	1.090	1.030	1.183	1.117	1.058
In-110a	0.838	0.778	0.771	0.962	0.895	0.839	1.050	0.983	0.918	1.159	1.093	1.032	1.186	1.120	1.060
Sn-110	0.945	0.869	0.852	1.075	0.989	0.914	1.153	1.068	0.981	1.235	1.149	1.066	1.251	1.166	1.083
Sn-110+D	0.862	0.809	0.802	0.968	0.911	0.862	1.041	0.986	0.931	1.129	1.077	1.027	1.151	1.099	1.050
Ag-111	0.877	0.813	0.805	1.006	0.933	0.873	1.093	1.021	0.952	1.195	1.123	1.058	1.218	1.147	1.082
In-111	0.957	0.878	0.860	1.086	0.999	0.921	1.164	1.076	0.987	1.242	1.154	1.069	1.258	1.170	1.085
Sn-111	0.864	0.799	0.790	0.989	0.917	0.855	1.074	1.002	0.931	1.175	1.104	1.037	1.200	1.128	1.062
Sn-111+D	0.980	0.940	0.931	1.037	1.000	0.963	1.068	1.033	0.994	1.095	1.063	1.029	1.100	1.068	1.035
Ag-112	0.809	0.752	0.748	0.931	0.867	0.816	1.020	0.956	0.897	1.135	1.072	1.017	1.164	1.102	1.047
In-112	0.882	0.815	0.804	1.008	0.934	0.870	1.093	1.018	0.945	1.191	1.117	1.047	1.215	1.140	1.072
Cd-113m	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Cd-113	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
In-113m	0.895	0.827	0.816	1.023	0.947	0.882	1.107	1.031	0.956	1.203	1.127	1.056	1.225	1.149	1.078
Sn-113	1.089	0.985	0.947	1.219	1.105	0.996	1.278	1.163	1.036	1.314	1.198	1.076	1.318	1.202	1.079
Sn-113+D	0.901	0.836	0.825	1.022	0.950	0.888	1.100	1.029	0.958	1.190	1.119	1.053	1.210	1.140	1.074
In-114m	0.952	0.873	0.854	1.080	0.992	0.914	1.156	1.068	0.977	1.234	1.145	1.058	1.250	1.162	1.075
In-114m+	0.996	0.993	0.992	0.999	0.997	0.995	1.001	1.000	0.997	1.004	1.002	1.001	1.004	1.003	1.001
In-114	0.852	0.787	0.776	0.975	0.902	0.840	1.058	0.985	0.914	1.160	1.087	1.020	1.185	1.113	1.046
Ag-115	0.805	0.749	0.744	0.927	0.863	0.812	1.015	0.952	0.892	1.129	1.067	1.012	1.159	1.097	1.042
Ag-115+D	0.955	0.925	0.920	1.005	0.976	0.950	1.034	1.008	0.981	1.063	1.041	1.018	1.069	1.047	1.026
Cd-115m	0.809	0.753	0.749	0.931	0.868	0.816	1.020	0.957	0.898	1.136	1.074	1.018	1.166	1.104	1.049
Cd-115	0.858	0.795	0.789	0.984	0.914	0.856	1.072	1.002	0.936	1.178	1.110	1.046	1.203	1.134	1.073
Cd-115+D	0.969	0.935	0.927	1.024	0.990	0.958	1.053	1.022	0.989	1.081	1.053	1.024	1.086	1.059	1.031
In-115m	0.930	0.856	0.840	1.059	0.976	0.904	1.139	1.056	0.973	1.224	1.142	1.063	1.242	1.160	1.081
In-115	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Sb-115	0.865	0.802	0.794	0.991	0.920	0.860	1.078	1.008	0.939	1.182	1.112	1.046	1.207	1.136	1.072
In-116m	0.797	0.742	0.738	0.918	0.856	0.806	1.007	0.945	0.887	1.124	1.063	1.009	1.155	1.094	1.041
Sb-116m	0.825	0.767	0.761	0.949	0.883	0.828	1.036	0.971	0.908	1.148	1.083	1.024	1.176	1.111	1.053
Sb-116	0.810	0.753	0.748	0.932	0.868	0.816	1.020	0.957	0.896	1.135	1.072	1.015	1.164	1.101	1.045



Te-116	1.036	0.944	0.916	1.168	1.065	0.971	1.236	1.133	1.023	1.288	1.184	1.079	1.295	1.192	1.086
Te-116+D	0.815	0.759	0.754	0.934	0.872	0.821	1.019	0.958	0.899	1.130	1.070	1.015	1.158	1.098	1.044
Cd-117m	0.789	0.734	0.731	0.909	0.847	0.798	0.997	0.937	0.880	1.115	1.056	1.003	1.147	1.087	1.035
Cd-117m+	0.957	0.935	0.933	0.997	0.976	0.957	1.020	1.002	0.983	1.043	1.028	1.012	1.048	1.033	1.019
Cd-117	0.810	0.753	0.749	0.932	0.868	0.816	1.020	0.957	0.897	1.135	1.072	1.016	1.165	1.102	1.047
Cd-117+D	0.958	0.933	0.930	1.001	0.978	0.956	1.026	1.005	0.983	1.051	1.033	1.015	1.056	1.039	1.022
In-117m	0.944	0.868	0.851	1.074	0.988	0.914	1.153	1.067	0.981	1.234	1.149	1.067	1.251	1.166	1.084
In-117m+	0.891	0.839	0.833	0.991	0.936	0.889	1.057	1.005	0.952	1.134	1.084	1.037	1.152	1.102	1.056
In-117	0.861	0.799	0.792	0.988	0.918	0.860	1.076	1.006	0.939	1.181	1.112	1.048	1.206	1.136	1.074
In-117+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Sb-117	0.981	0.898	0.878	1.111	1.019	0.937	1.186	1.094	0.998	1.255	1.163	1.072	1.268	1.176	1.085
Sn-117m	0.990	0.906	0.884	1.120	1.027	0.944	1.195	1.101	1.004	1.262	1.169	1.076	1.274	1.181	1.088
Sb-118m	0.828	0.769	0.763	0.952	0.884	0.829	1.038	0.972	0.908	1.148	1.082	1.022	1.176	1.110	1.051
In-119m	1.048	0.951	0.917	1.177	1.069	0.969	1.240	1.132	1.014	1.288	1.178	1.065	1.295	1.186	1.073
In-119m+	0.937	0.909	0.905	0.986	0.960	0.935	1.017	0.993	0.968	1.053	1.033	1.012	1.062	1.042	1.023
In-119	0.835	0.775	0.770	0.960	0.893	0.838	1.048	0.981	0.917	1.159	1.093	1.032	1.186	1.120	1.060
In-119+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Sb-119	1.087	0.985	0.948	1.219	1.105	0.998	1.279	1.164	1.039	1.315	1.199	1.078	1.318	1.203	1.081
Sn-119m	1.092	0.988	0.951	1.223	1.108	0.999	1.282	1.166	1.039	1.317	1.200	1.077	1.320	1.203	1.080
I-120m	0.813	0.756	0.751	0.935	0.871	0.819	1.024	0.960	0.900	1.138	1.075	1.019	1.167	1.104	1.049
I-120	0.810	0.753	0.748	0.931	0.868	0.816	1.020	0.956	0.896	1.134	1.071	1.015	1.163	1.101	1.046
Sb-120b	0.826	0.767	0.761	0.949	0.883	0.828	1.037	0.971	0.907	1.147	1.082	1.023	1.175	1.110	1.052
Sb-120a	0.876	0.810	0.801	1.002	0.929	0.867	1.088	1.015	0.944	1.188	1.116	1.048	1.212	1.139	1.072
Xe-120	0.911	0.839	0.826	1.038	0.959	0.890	1.120	1.040	0.961	1.209	1.130	1.054	1.229	1.150	1.075
Xe-120+D	0.834	0.782	0.777	0.941	0.885	0.838	1.017	0.962	0.910	1.113	1.060	1.013	1.137	1.086	1.039
I-121	0.902	0.833	0.822	1.030	0.953	0.887	1.114	1.037	0.961	1.207	1.131	1.059	1.228	1.151	1.080
I-121+D	0.926	0.882	0.876	1.003	0.959	0.920	1.050	1.009	0.967	1.102	1.065	1.027	1.114	1.077	1.041
Sn-121m	1.065	0.967	0.936	1.197	1.089	0.989	1.261	1.153	1.037	1.304	1.195	1.083	1.309	1.200	1.087
Sn-121m+	0.999	0.997	0.997	1.001	1.000	0.998	1.003	1.001	1.000	1.004	1.003	1.002	1.004	1.003	1.002
Sn-121	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Te-121m	0.929	0.856	0.842	1.058	0.977	0.906	1.140	1.058	0.976	1.225	1.144	1.066	1.243	1.162	1.084
Te-121m+	0.911	0.860	0.853	1.004	0.951	0.904	1.062	1.011	0.960	1.126	1.080	1.034	1.142	1.095	1.050
Te-121	0.878	0.812	0.803	1.005	0.931	0.869	1.090	1.016	0.944	1.189	1.117	1.048	1.213	1.140	1.072
Xe-121	0.830	0.771	0.765	0.954	0.887	0.832	1.041	0.975	0.912	1.151	1.085	1.026	1.179	1.113	1.054
Xe-121+D	0.955	0.924	0.920	1.006	0.977	0.950	1.035	1.009	0.981	1.065	1.042	1.019	1.071	1.049	1.026
I-122	0.852	0.790	0.784	0.977	0.909	0.852	1.066	0.998	0.932	1.173	1.106	1.044	1.199	1.131	1.071
Sb-122	0.844	0.784	0.778	0.969	0.902	0.846	1.058	0.991	0.926	1.168	1.101	1.041	1.194	1.128	1.068
Xe-122	0.992	0.909	0.887	1.124	1.031	0.947	1.198	1.104	1.009	1.264	1.170	1.078	1.275	1.182	1.089

Xe-122+D	0.860	0.801	0.795	0.978	0.914	0.860	1.061	0.998	0.936	1.161	1.099	1.041	1.185	1.122	1.067
I-123	0.975	0.895	0.876	1.106	1.017	0.937	1.183	1.093	1.001	1.255	1.165	1.077	1.268	1.178	1.090
I-123+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Sn-123m	0.928	0.856	0.844	1.058	0.978	0.909	1.142	1.062	0.982	1.229	1.149	1.074	1.247	1.167	1.092
Sn-123	0.805	0.749	0.745	0.927	0.864	0.813	1.016	0.954	0.895	1.132	1.071	1.016	1.163	1.101	1.047
Te-123m	0.964	0.886	0.869	1.095	1.008	0.931	1.174	1.086	0.998	1.249	1.162	1.078	1.263	1.176	1.091
Te-123	1.070	0.971	0.939	1.202	1.093	0.991	1.265	1.156	1.038	1.307	1.196	1.083	1.311	1.201	1.087
Xe-123	0.861	0.798	0.789	0.986	0.915	0.855	1.072	1.001	0.933	1.175	1.104	1.039	1.199	1.129	1.064
Xe-123+D	0.994	0.975	0.970	1.022	1.004	0.986	1.035	1.019	1.000	1.045	1.031	1.015	1.047	1.033	1.017
I-124	0.834	0.774	0.768	0.958	0.891	0.835	1.045	0.978	0.914	1.154	1.088	1.028	1.182	1.115	1.056
Sb-124n	1.091	0.987	0.950	1.222	1.108	0.999	1.281	1.166	1.039	1.316	1.200	1.078	1.319	1.203	1.080
Sb-124n+	0.812	0.755	0.751	0.934	0.871	0.818	1.023	0.960	0.900	1.137	1.075	1.018	1.167	1.104	1.050
Sb-124m	0.843	0.783	0.777	0.968	0.901	0.846	1.057	0.990	0.926	1.167	1.101	1.040	1.194	1.127	1.068
Sb-124m+	0.838	0.790	0.786	0.941	0.888	0.844	1.011	0.962	0.913	1.100	1.053	1.010	1.123	1.076	1.035
Sb-124	0.804	0.748	0.744	0.926	0.863	0.811	1.014	0.952	0.893	1.130	1.068	1.013	1.160	1.098	1.045
Cs-125	0.861	0.798	0.791	0.987	0.917	0.858	1.074	1.004	0.937	1.179	1.110	1.046	1.204	1.134	1.072
Cs-125+D	0.983	0.957	0.951	1.023	0.998	0.974	1.043	1.021	0.996	1.061	1.041	1.020	1.064	1.045	1.024
I-125	1.056	0.961	0.932	1.188	1.083	0.985	1.255	1.149	1.036	1.301	1.194	1.085	1.306	1.199	1.090
Sb-125	0.876	0.811	0.802	1.003	0.930	0.869	1.089	1.016	0.945	1.189	1.117	1.050	1.213	1.141	1.074
Sb-125+D	1.001	0.999	0.999	1.002	1.001	1.000	1.003	1.002	1.000	1.003	1.002	1.001	1.003	1.002	1.001
Sn-125	0.804	0.749	0.745	0.927	0.863	0.813	1.015	0.953	0.894	1.131	1.070	1.015	1.162	1.100	1.046
Sn-125+D	0.924	0.880	0.874	1.003	0.958	0.919	1.052	1.010	0.968	1.103	1.066	1.029	1.115	1.078	1.042
Te-125m	1.055	0.961	0.931	1.188	1.083	0.985	1.255	1.149	1.036	1.300	1.194	1.085	1.305	1.199	1.090
Xe-125	0.938	0.863	0.849	1.067	0.985	0.912	1.148	1.065	0.982	1.231	1.148	1.068	1.247	1.165	1.085
Xe-125+D	1.005	0.996	0.993	1.016	1.008	0.999	1.020	1.013	1.003	1.023	1.016	1.007	1.023	1.016	1.008
Ba-126	0.925	0.853	0.840	1.054	0.974	0.904	1.136	1.056	0.976	1.223	1.143	1.066	1.241	1.160	1.084
Ba-126+D	0.871	0.816	0.809	0.983	0.923	0.871	1.061	1.001	0.944	1.152	1.094	1.041	1.173	1.116	1.064
Cs-126	0.855	0.794	0.787	0.981	0.913	0.855	1.070	1.001	0.936	1.177	1.109	1.047	1.203	1.134	1.074
I-126	0.866	0.802	0.794	0.992	0.921	0.861	1.078	1.007	0.938	1.181	1.111	1.046	1.206	1.135	1.071
Sb-126m	0.840	0.780	0.775	0.965	0.898	0.844	1.054	0.987	0.924	1.164	1.099	1.039	1.191	1.126	1.066
Sb-126m+	0.962	0.945	0.943	0.992	0.977	0.963	1.010	0.997	0.983	1.029	1.018	1.007	1.033	1.023	1.012
Sb-126	0.836	0.777	0.771	0.961	0.894	0.840	1.050	0.983	0.920	1.161	1.096	1.036	1.188	1.123	1.064
Sn-126	1.025	0.934	0.908	1.156	1.056	0.965	1.226	1.125	1.020	1.283	1.182	1.080	1.291	1.191	1.089
Sn-126+D	0.843	0.784	0.779	0.965	0.900	0.847	1.052	0.987	0.925	1.158	1.096	1.037	1.185	1.122	1.064
Cs-127	0.890	0.823	0.813	1.018	0.943	0.879	1.103	1.028	0.955	1.199	1.125	1.056	1.221	1.147	1.078
Cs-127+D	0.975	0.941	0.935	1.027	0.995	0.964	1.056	1.026	0.994	1.082	1.055	1.027	1.086	1.060	1.033
Sb-127	0.841	0.781	0.776	0.967	0.899	0.844	1.055	0.988	0.924	1.165	1.099	1.039	1.192	1.126	1.066
Sb-127+D	0.999	0.998	0.998	1.000	0.999	0.999	1.001	1.000	1.000	1.002	1.001	1.001	1.002	1.001	1.001

Sn-127	0.806	0.750	0.746	0.928	0.865	0.814	1.017	0.954	0.895	1.132	1.070	1.015	1.162	1.100	1.045
Sn-127+D	0.950	0.927	0.925	0.991	0.970	0.951	1.015	0.997	0.978	1.041	1.026	1.011	1.047	1.032	1.017
Te-127m	1.056	0.961	0.932	1.189	1.083	0.985	1.255	1.149	1.036	1.301	1.194	1.085	1.306	1.199	1.090
Te-127m+	0.941	0.909	0.904	0.998	0.967	0.938	1.033	1.006	0.975	1.074	1.048	1.023	1.083	1.059	1.034
Te-127	0.868	0.805	0.798	0.995	0.925	0.866	1.083	1.013	0.945	1.187	1.117	1.053	1.212	1.142	1.078
Xe-127	0.941	0.866	0.852	1.070	0.988	0.915	1.152	1.068	0.985	1.234	1.152	1.072	1.251	1.168	1.089
Ba-128	0.974	0.895	0.876	1.106	1.017	0.938	1.183	1.094	1.005	1.255	1.166	1.079	1.268	1.179	1.092
Ba-128+D	0.865	0.806	0.800	0.982	0.918	0.864	1.064	1.001	0.939	1.161	1.100	1.043	1.185	1.122	1.067
Cs-128	0.855	0.793	0.787	0.981	0.912	0.855	1.070	1.001	0.935	1.176	1.108	1.046	1.202	1.133	1.072
I-128	0.868	0.804	0.797	0.995	0.924	0.864	1.082	1.011	0.942	1.185	1.115	1.050	1.210	1.139	1.075
Sb-128b	0.833	0.774	0.769	0.958	0.891	0.837	1.046	0.980	0.918	1.158	1.093	1.034	1.186	1.121	1.062
Sb-128a	0.834	0.775	0.770	0.959	0.892	0.838	1.047	0.981	0.919	1.159	1.094	1.035	1.186	1.121	1.063
Sn-128	0.910	0.839	0.826	1.037	0.959	0.890	1.120	1.040	0.961	1.210	1.131	1.056	1.230	1.151	1.077
Sn-128+D	0.872	0.823	0.818	0.969	0.918	0.874	1.035	0.986	0.938	1.114	1.069	1.026	1.133	1.088	1.047
Cs-129	0.920	0.848	0.835	1.049	0.969	0.900	1.131	1.051	0.972	1.219	1.140	1.064	1.238	1.159	1.083
I-129	1.034	0.944	0.919	1.167	1.067	0.975	1.238	1.137	1.033	1.290	1.190	1.088	1.297	1.196	1.095
Sb-129	0.813	0.756	0.752	0.936	0.872	0.820	1.025	0.961	0.901	1.140	1.077	1.021	1.169	1.106	1.051
Sb-129+D	0.995	0.990	0.989	1.002	0.998	0.994	1.005	1.002	0.998	1.009	1.006	1.003	1.009	1.006	1.003
Te-129m	0.952	0.874	0.856	1.081	0.994	0.916	1.158	1.070	0.981	1.234	1.147	1.061	1.250	1.162	1.077
Te-129m+	0.947	0.906	0.898	1.016	0.975	0.937	1.056	1.019	0.977	1.098	1.064	1.028	1.108	1.073	1.039
Te-129	0.903	0.833	0.821	1.031	0.953	0.886	1.113	1.036	0.958	1.205	1.128	1.054	1.226	1.148	1.076
Xe-129m	1.029	0.939	0.915	1.161	1.062	0.972	1.233	1.133	1.030	1.287	1.187	1.087	1.294	1.194	1.094
Cs-130	0.863	0.800	0.793	0.989	0.919	0.860	1.077	1.007	0.939	1.181	1.112	1.047	1.206	1.135	1.073
I-130	0.836	0.777	0.771	0.961	0.894	0.840	1.050	0.983	0.920	1.161	1.096	1.036	1.188	1.123	1.064
Sb-130	0.826	0.768	0.763	0.950	0.885	0.831	1.039	0.974	0.912	1.152	1.087	1.029	1.180	1.115	1.058
Ba-131m	0.975	0.896	0.879	1.107	1.019	0.941	1.186	1.097	1.009	1.258	1.170	1.083	1.270	1.182	1.096
Ba-131m+	0.911	0.850	0.840	1.023	0.957	0.899	1.095	1.031	0.966	1.173	1.111	1.051	1.191	1.128	1.069
Ba-131	0.894	0.826	0.816	1.022	0.947	0.882	1.107	1.032	0.958	1.202	1.128	1.058	1.224	1.149	1.080
Ba-131+D	1.001	0.998	0.997	1.005	1.002	0.999	1.007	1.004	1.001	1.008	1.005	1.003	1.008	1.006	1.003
Cs-131	1.037	0.947	0.921	1.170	1.070	0.977	1.240	1.139	1.034	1.292	1.191	1.088	1.298	1.197	1.094
I-131	0.868	0.804	0.797	0.995	0.924	0.866	1.082	1.012	0.944	1.187	1.117	1.053	1.211	1.142	1.078
I-131+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
La-131	0.873	0.809	0.800	1.000	0.928	0.868	1.087	1.015	0.946	1.188	1.118	1.052	1.212	1.141	1.076
La-131+D	0.955	0.922	0.916	1.011	0.979	0.949	1.043	1.014	0.983	1.075	1.050	1.023	1.082	1.057	1.031
Sb-131	0.804	0.748	0.744	0.926	0.862	0.812	1.014	0.952	0.893	1.130	1.069	1.014	1.160	1.099	1.045
Sb-131+D	0.945	0.918	0.915	0.994	0.968	0.945	1.022	1.000	0.976	1.053	1.034	1.014	1.060	1.041	1.023
Te-131m	0.827	0.768	0.763	0.951	0.885	0.831	1.039	0.974	0.911	1.151	1.087	1.028	1.179	1.114	1.057
Te-131m+	0.961	0.939	0.937	0.998	0.978	0.961	1.019	1.002	0.984	1.042	1.027	1.013	1.046	1.032	1.018

Te-131	0.853	0.792	0.785	0.979	0.910	0.852	1.066	0.997	0.931	1.172	1.104	1.042	1.198	1.129	1.068
Te-131+D	0.932	0.896	0.892	0.998	0.962	0.931	1.037	1.006	0.973	1.081	1.052	1.025	1.090	1.063	1.036
Xe-131m	1.032	0.942	0.917	1.165	1.065	0.974	1.236	1.135	1.032	1.289	1.189	1.087	1.296	1.195	1.094
Cs-132	0.855	0.793	0.786	0.981	0.911	0.853	1.068	0.998	0.931	1.173	1.104	1.041	1.199	1.130	1.067
I-132m	0.866	0.802	0.793	0.992	0.920	0.859	1.078	1.005	0.935	1.180	1.109	1.042	1.204	1.133	1.067
I-132m+D	0.846	0.793	0.789	0.955	0.898	0.851	1.031	0.976	0.923	1.126	1.073	1.025	1.150	1.097	1.049
I-132	0.824	0.766	0.762	0.948	0.883	0.830	1.037	0.972	0.911	1.150	1.086	1.029	1.179	1.115	1.058
La-132	0.820	0.762	0.757	0.942	0.877	0.824	1.031	0.966	0.905	1.143	1.079	1.022	1.172	1.108	1.051
Te-132	0.942	0.868	0.853	1.072	0.990	0.917	1.154	1.070	0.987	1.236	1.153	1.073	1.252	1.170	1.090
Te-132+D	0.839	0.784	0.780	0.953	0.893	0.844	1.033	0.975	0.919	1.134	1.077	1.026	1.160	1.103	1.053
Ba-133m	0.972	0.889	0.869	1.102	1.009	0.930	1.179	1.086	0.997	1.254	1.161	1.074	1.267	1.175	1.089
Ba-133m+	0.928	0.865	0.854	1.040	0.972	0.913	1.110	1.044	0.977	1.183	1.119	1.057	1.199	1.135	1.074
Ba-133	0.917	0.846	0.834	1.047	0.968	0.900	1.130	1.051	0.973	1.219	1.141	1.067	1.238	1.160	1.086
I-133	0.841	0.781	0.776	0.966	0.899	0.844	1.055	0.988	0.925	1.165	1.099	1.039	1.192	1.126	1.067
I-133+D	1.000	0.994	0.992	1.008	1.003	0.997	1.012	1.007	1.001	1.014	1.010	1.005	1.014	1.010	1.005
Te-133m	0.819	0.761	0.757	0.942	0.877	0.825	1.031	0.966	0.905	1.144	1.081	1.024	1.173	1.109	1.053
Te-133m+	0.955	0.934	0.932	0.993	0.973	0.956	1.015	0.998	0.980	1.039	1.024	1.010	1.044	1.030	1.016
Te-133	0.828	0.769	0.764	0.952	0.886	0.832	1.040	0.975	0.913	1.152	1.087	1.029	1.180	1.115	1.057
Te-133+D	0.931	0.899	0.896	0.990	0.959	0.932	1.026	0.998	0.970	1.065	1.041	1.017	1.074	1.050	1.027
Xe-133m	1.001	0.916	0.895	1.133	1.039	0.954	1.207	1.113	1.016	1.271	1.176	1.082	1.281	1.186	1.093
Xe-133m+	1.001	0.954	0.943	1.067	1.021	0.977	1.101	1.058	1.010	1.128	1.087	1.044	1.132	1.092	1.049
Xe-133	1.001	0.917	0.897	1.134	1.041	0.957	1.209	1.115	1.020	1.273	1.179	1.086	1.282	1.189	1.096
Ce-134	1.014	0.928	0.907	1.147	1.052	0.966	1.221	1.125	1.028	1.280	1.185	1.089	1.289	1.193	1.097
Ce-134+D	0.858	0.798	0.791	0.981	0.913	0.858	1.066	1.000	0.936	1.169	1.104	1.044	1.194	1.128	1.069
Cs-134m	1.021	0.926	0.900	1.150	1.046	0.957	1.222	1.117	1.018	1.283	1.179	1.081	1.293	1.188	1.091
Cs-134m+	0.834	0.776	0.771	0.957	0.892	0.838	1.044	0.979	0.918	1.154	1.091	1.033	1.182	1.118	1.061
Cs-134	0.832	0.773	0.768	0.956	0.890	0.836	1.045	0.979	0.917	1.157	1.092	1.033	1.185	1.120	1.062
I-134	0.816	0.759	0.755	0.939	0.875	0.823	1.028	0.964	0.904	1.142	1.079	1.023	1.171	1.108	1.053
La-134	0.854	0.793	0.786	0.980	0.911	0.854	1.068	1.000	0.934	1.175	1.107	1.045	1.201	1.132	1.071
Te-134	0.855	0.793	0.787	0.981	0.912	0.854	1.069	1.000	0.933	1.175	1.107	1.044	1.201	1.132	1.070
Te-134+D	0.857	0.810	0.806	0.954	0.904	0.863	1.021	0.973	0.927	1.102	1.058	1.017	1.122	1.078	1.039
Ba-135m	0.964	0.886	0.869	1.095	1.008	0.932	1.174	1.087	1.000	1.249	1.163	1.078	1.263	1.176	1.092
Ce-135	0.850	0.789	0.783	0.976	0.908	0.851	1.064	0.996	0.931	1.173	1.105	1.044	1.199	1.131	1.071
Ce-135+D	1.000	0.998	0.998	1.002	1.001	0.999	1.003	1.002	1.000	1.004	1.002	1.001	1.004	1.003	1.001
Cs-135m	0.824	0.766	0.762	0.948	0.883	0.830	1.037	0.972	0.911	1.151	1.087	1.029	1.179	1.115	1.058
Cs-135	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
I-135	0.795	0.740	0.736	0.916	0.854	0.804	1.005	0.943	0.886	1.122	1.061	1.008	1.153	1.092	1.040
I-135+D	0.976	0.960	0.958	1.002	0.988	0.975	1.016	1.004	0.991	1.030	1.020	1.010	1.033	1.023	1.014

La-135	0.999	0.916	0.895	1.132	1.039	0.955	1.206	1.113	1.018	1.270	1.177	1.083	1.280	1.186	1.093
Xe-135m	0.855	0.794	0.787	0.981	0.913	0.855	1.070	1.001	0.935	1.176	1.109	1.046	1.202	1.133	1.072
Xe-135m+	0.955	0.926	0.922	1.006	0.978	0.953	1.036	1.011	0.984	1.066	1.044	1.022	1.073	1.051	1.030
Xe-135	0.888	0.823	0.814	1.017	0.944	0.882	1.104	1.030	0.959	1.203	1.130	1.063	1.225	1.152	1.085
Cs-136	0.822	0.764	0.759	0.945	0.880	0.827	1.034	0.969	0.908	1.147	1.083	1.026	1.176	1.112	1.055
Nd-136	0.901	0.833	0.822	1.030	0.953	0.888	1.114	1.038	0.963	1.207	1.132	1.060	1.228	1.152	1.081
Nd-136+D	0.846	0.792	0.787	0.957	0.898	0.849	1.035	0.977	0.922	1.130	1.076	1.025	1.154	1.099	1.050
Pr-136	0.827	0.769	0.764	0.951	0.885	0.831	1.040	0.974	0.912	1.151	1.087	1.028	1.179	1.114	1.057
Ba-137m	0.838	0.779	0.773	0.963	0.896	0.842	1.052	0.985	0.922	1.163	1.097	1.037	1.190	1.124	1.065
Ce-137m	0.957	0.880	0.865	1.088	1.003	0.928	1.168	1.082	0.997	1.245	1.160	1.077	1.260	1.174	1.092
Ce-137m+	1.002	0.967	0.958	1.048	1.014	0.983	1.070	1.039	1.007	1.087	1.059	1.029	1.090	1.062	1.032
Ce-137	1.006	0.918	0.895	1.137	1.039	0.955	1.211	1.113	1.018	1.275	1.177	1.083	1.285	1.187	1.093
Cs-137	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Cs-137+D	0.838	0.779	0.773	0.963	0.896	0.842	1.052	0.985	0.922	1.163	1.097	1.037	1.190	1.124	1.065
La-137	1.021	0.934	0.911	1.154	1.057	0.970	1.227	1.130	1.031	1.284	1.187	1.088	1.292	1.194	1.097
Pr-137	0.858	0.796	0.789	0.984	0.915	0.856	1.072	1.003	0.936	1.177	1.109	1.045	1.202	1.133	1.071
Pr-137+D	1.000	0.995	0.993	1.007	1.002	0.997	1.010	1.006	1.001	1.012	1.008	1.004	1.012	1.009	1.005
Cs-138	0.790	0.736	0.732	0.911	0.849	0.800	1.000	0.938	0.881	1.117	1.057	1.004	1.149	1.088	1.036
La-138	0.802	0.746	0.742	0.924	0.861	0.809	1.012	0.949	0.890	1.128	1.066	1.011	1.158	1.096	1.042
Nd-138	0.980	0.900	0.882	1.113	1.023	0.944	1.190	1.101	1.011	1.261	1.172	1.084	1.273	1.183	1.096
Nd-138+D	0.858	0.799	0.792	0.979	0.913	0.858	1.063	0.998	0.936	1.165	1.102	1.043	1.190	1.126	1.069
Pr-138m	0.829	0.770	0.765	0.953	0.887	0.833	1.042	0.976	0.914	1.153	1.089	1.030	1.181	1.116	1.059
Pr-138	0.852	0.791	0.784	0.978	0.909	0.852	1.066	0.998	0.933	1.174	1.107	1.045	1.200	1.132	1.072
Xe-138	0.794	0.739	0.734	0.914	0.852	0.801	1.002	0.940	0.883	1.119	1.058	1.004	1.150	1.088	1.035
Xe-138+D	0.847	0.804	0.801	0.938	0.892	0.855	1.000	0.957	0.916	1.077	1.038	1.003	1.097	1.058	1.024
Ba-139	0.905	0.837	0.826	1.034	0.958	0.893	1.119	1.043	0.968	1.212	1.137	1.066	1.232	1.156	1.086
Ce-139	0.952	0.877	0.862	1.084	1.000	0.926	1.165	1.080	0.997	1.244	1.160	1.079	1.259	1.175	1.094
Nd-139m	0.830	0.771	0.766	0.954	0.888	0.833	1.042	0.976	0.913	1.153	1.088	1.029	1.181	1.116	1.057
Nd-139m+	0.984	0.969	0.966	1.009	0.995	0.981	1.021	1.009	0.995	1.033	1.022	1.011	1.035	1.024	1.014
Nd-139	0.860	0.797	0.790	0.986	0.916	0.857	1.073	1.004	0.937	1.178	1.109	1.045	1.203	1.134	1.071
Nd-139+D	0.970	0.937	0.930	1.024	0.992	0.961	1.054	1.024	0.993	1.081	1.054	1.027	1.086	1.060	1.033
Pr-139	0.905	0.835	0.824	1.033	0.956	0.889	1.116	1.039	0.963	1.208	1.131	1.058	1.228	1.151	1.079
Pr-139+D	0.972	0.926	0.917	1.046	1.000	0.957	1.087	1.044	0.998	1.124	1.084	1.043	1.131	1.091	1.051
Ba-140	0.877	0.811	0.801	1.003	0.930	0.868	1.090	1.016	0.945	1.191	1.118	1.050	1.214	1.141	1.075
Ba-140+D	0.810	0.757	0.754	0.923	0.865	0.818	1.006	0.948	0.894	1.112	1.057	1.007	1.140	1.085	1.037
La-140	0.796	0.741	0.738	0.917	0.855	0.805	1.006	0.944	0.886	1.123	1.062	1.008	1.154	1.093	1.040
Ba-141	0.837	0.777	0.771	0.961	0.894	0.839	1.049	0.983	0.919	1.159	1.093	1.034	1.186	1.120	1.061
Ba-141+D	0.979	0.967	0.965	0.999	0.988	0.978	1.010	1.001	0.991	1.021	1.014	1.006	1.024	1.016	1.009

Ce-141	0.932	0.860	0.848	1.063	0.983	0.914	1.147	1.066	0.987	1.233	1.153	1.077	1.250	1.170	1.095
La-141	0.788	0.734	0.730	0.908	0.847	0.798	0.997	0.936	0.880	1.116	1.056	1.003	1.148	1.087	1.035
La-141+D	0.959	0.914	0.906	1.036	0.990	0.949	1.079	1.037	0.993	1.119	1.080	1.041	1.126	1.088	1.050
Nd-141m	0.829	0.770	0.766	0.953	0.887	0.834	1.042	0.976	0.915	1.155	1.090	1.032	1.183	1.118	1.060
Nd-141m+	0.993	0.985	0.983	1.005	0.998	0.991	1.011	1.005	0.998	1.016	1.011	1.005	1.017	1.012	1.006
Nd-141	0.925	0.853	0.839	1.054	0.974	0.903	1.136	1.055	0.975	1.221	1.141	1.063	1.239	1.158	1.082
Pm-141	0.841	0.781	0.775	0.966	0.899	0.843	1.054	0.987	0.923	1.164	1.097	1.037	1.190	1.124	1.064
Pm-141+D	0.993	0.985	0.983	1.005	0.998	0.990	1.011	1.005	0.998	1.016	1.011	1.005	1.017	1.012	1.006
Sm-141m	0.830	0.771	0.766	0.954	0.888	0.833	1.042	0.976	0.914	1.153	1.088	1.030	1.181	1.116	1.058
Sm-141m+	0.949	0.925	0.922	0.992	0.970	0.949	1.017	0.998	0.977	1.045	1.028	1.011	1.051	1.035	1.019
Sm-141	0.834	0.775	0.769	0.959	0.892	0.837	1.047	0.981	0.918	1.157	1.092	1.033	1.185	1.119	1.061
Sm-141+D	0.937	0.908	0.905	0.990	0.962	0.937	1.022	0.997	0.972	1.057	1.035	1.014	1.064	1.044	1.023
Ba-142	0.823	0.765	0.760	0.946	0.881	0.828	1.035	0.970	0.908	1.147	1.083	1.025	1.176	1.111	1.054
Ba-142+D	0.830	0.786	0.783	0.922	0.876	0.838	0.986	0.943	0.901	1.068	1.029	0.993	1.089	1.051	1.016
La-142	0.773	0.720	0.717	0.892	0.832	0.784	0.980	0.921	0.865	1.099	1.041	0.990	1.132	1.074	1.023
Pm-142	0.848	0.787	0.781	0.974	0.906	0.849	1.062	0.995	0.930	1.171	1.104	1.043	1.197	1.130	1.070
Pr-142m	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pr-142m+	0.781	0.727	0.724	0.901	0.840	0.791	0.990	0.929	0.873	1.109	1.049	0.998	1.141	1.081	1.031
Pr-142	0.781	0.727	0.724	0.901	0.840	0.791	0.990	0.929	0.873	1.109	1.049	0.998	1.141	1.081	1.031
Sm-142	0.911	0.841	0.830	1.040	0.962	0.895	1.123	1.046	0.969	1.214	1.137	1.063	1.233	1.156	1.083
Sm-142+D	0.860	0.803	0.798	0.976	0.914	0.861	1.056	0.995	0.936	1.153	1.094	1.039	1.176	1.117	1.063
Ce-143	0.885	0.819	0.810	1.013	0.939	0.877	1.098	1.025	0.954	1.197	1.124	1.056	1.219	1.146	1.079
Ce-143+D	0.998	0.997	0.997	0.999	0.999	0.998	1.000	1.000	0.999	1.001	1.001	1.000	1.002	1.001	1.001
La-143	0.792	0.737	0.733	0.912	0.851	0.801	1.001	0.940	0.882	1.118	1.058	1.005	1.150	1.089	1.037
La-143+D	0.913	0.861	0.854	1.009	0.954	0.907	1.069	1.018	0.966	1.134	1.086	1.039	1.148	1.100	1.055
Pm-143	0.856	0.794	0.787	0.982	0.912	0.854	1.069	0.999	0.932	1.174	1.105	1.041	1.199	1.130	1.067
Pr-143	0.829	0.770	0.766	0.953	0.888	0.834	1.042	0.977	0.915	1.155	1.091	1.032	1.183	1.118	1.061
Ce-144	0.955	0.879	0.864	1.086	1.002	0.929	1.167	1.083	0.999	1.246	1.163	1.082	1.261	1.177	1.097
Ce-144+D	0.841	0.795	0.792	0.934	0.887	0.846	0.998	0.953	0.910	1.081	1.040	1.002	1.104	1.062	1.025
Pm-144	0.844	0.784	0.778	0.970	0.902	0.846	1.058	0.990	0.926	1.167	1.101	1.040	1.194	1.127	1.067
Pr-144m	0.995	0.912	0.893	1.127	1.036	0.954	1.203	1.112	1.019	1.269	1.178	1.087	1.280	1.188	1.098
Pr-144m+	0.820	0.770	0.767	0.924	0.871	0.826	0.998	0.946	0.897	1.094	1.046	1.002	1.121	1.071	1.029
Pr-144	0.789	0.734	0.731	0.909	0.848	0.798	0.997	0.936	0.879	1.115	1.055	1.002	1.147	1.086	1.034
Eu-145	0.811	0.754	0.750	0.934	0.870	0.818	1.022	0.958	0.898	1.136	1.074	1.017	1.166	1.103	1.047
Eu-145+D	0.999	0.994	0.993	1.007	1.002	0.997	1.010	1.006	1.001	1.012	1.008	1.004	1.012	1.009	1.005
Gd-145	0.794	0.739	0.735	0.915	0.853	0.802	1.003	0.941	0.884	1.120	1.059	1.005	1.151	1.090	1.037
Gd-145+D	0.916	0.885	0.882	0.976	0.946	0.919	1.013	0.985	0.958	1.054	1.031	1.008	1.064	1.042	1.020
Pm-145	0.994	0.912	0.893	1.127	1.036	0.955	1.203	1.112	1.020	1.270	1.180	1.089	1.280	1.189	1.100

Pr-145	0.827	0.769	0.764	0.951	0.885	0.832	1.040	0.974	0.912	1.152	1.087	1.029	1.180	1.115	1.057
Sm-145	0.988	0.907	0.889	1.121	1.031	0.951	1.198	1.108	1.017	1.267	1.178	1.089	1.278	1.188	1.100
Sm-145+D	0.998	0.970	0.963	1.037	1.011	0.985	1.057	1.033	1.006	1.072	1.051	1.027	1.075	1.053	1.030
Eu-146	0.824	0.766	0.761	0.947	0.882	0.829	1.036	0.971	0.909	1.149	1.085	1.027	1.177	1.113	1.056
Gd-146	0.950	0.875	0.861	1.082	0.998	0.926	1.164	1.080	0.997	1.244	1.162	1.082	1.259	1.176	1.097
Gd-146+D	0.838	0.783	0.778	0.952	0.892	0.842	1.033	0.974	0.917	1.134	1.077	1.025	1.159	1.102	1.051
Pm-146	0.847	0.786	0.781	0.973	0.905	0.849	1.061	0.993	0.928	1.170	1.103	1.041	1.196	1.128	1.068
Sm-146	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Eu-147	0.853	0.791	0.784	0.979	0.909	0.852	1.066	0.996	0.930	1.171	1.103	1.040	1.196	1.128	1.066
Eu-147+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Gd-147	0.840	0.780	0.775	0.965	0.898	0.842	1.053	0.986	0.922	1.162	1.096	1.036	1.189	1.123	1.063
Gd-147+D	0.955	0.933	0.931	0.994	0.974	0.955	1.017	0.999	0.980	1.041	1.026	1.010	1.046	1.031	1.017
Nd-147	0.893	0.826	0.816	1.021	0.946	0.883	1.106	1.032	0.959	1.203	1.129	1.059	1.224	1.150	1.082
Nd-147+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Pm-147	0.946	0.872	0.858	1.078	0.995	0.924	1.160	1.077	0.995	1.242	1.160	1.081	1.257	1.175	1.097
Pr-147	0.843	0.783	0.776	0.968	0.900	0.844	1.056	0.988	0.923	1.164	1.097	1.036	1.190	1.123	1.063
Pr-147+D	0.983	0.971	0.969	1.003	0.992	0.982	1.014	1.004	0.994	1.024	1.016	1.008	1.026	1.019	1.011
Sm-147	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Tb-147	0.826	0.768	0.762	0.950	0.884	0.831	1.038	0.973	0.911	1.151	1.086	1.028	1.179	1.114	1.057
Tb-147+D	0.909	0.870	0.867	0.983	0.944	0.910	1.030	0.994	0.958	1.082	1.050	1.019	1.094	1.063	1.033
Eu-148	0.834	0.775	0.770	0.959	0.892	0.838	1.047	0.981	0.918	1.158	1.093	1.034	1.186	1.120	1.062
Eu-148+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Gd-148	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pm-148m	0.838	0.779	0.773	0.963	0.896	0.842	1.052	0.985	0.922	1.162	1.097	1.037	1.190	1.124	1.065
Pm-148m+	0.997	0.996	0.996	0.999	0.998	0.997	1.000	0.999	0.999	1.001	1.001	1.000	1.002	1.001	1.001
Pm-148	0.806	0.750	0.746	0.928	0.865	0.814	1.017	0.954	0.895	1.133	1.071	1.016	1.163	1.101	1.047
Eu-149	0.948	0.873	0.859	1.079	0.995	0.923	1.160	1.076	0.993	1.241	1.158	1.078	1.256	1.173	1.093
Gd-149	0.879	0.814	0.806	1.007	0.934	0.873	1.093	1.021	0.951	1.194	1.122	1.055	1.216	1.144	1.078
Gd-149+D	0.993	0.982	0.980	1.009	0.999	0.990	1.018	1.009	0.999	1.025	1.017	1.009	1.026	1.018	1.010
Nd-149	0.878	0.813	0.805	1.005	0.933	0.873	1.092	1.020	0.951	1.194	1.122	1.056	1.217	1.145	1.080
Nd-149+D	0.994	0.991	0.991	1.000	0.997	0.994	1.003	1.001	0.998	1.006	1.004	1.002	1.007	1.005	1.003
Pm-149	0.871	0.808	0.801	0.999	0.928	0.868	1.087	1.016	0.948	1.190	1.119	1.055	1.213	1.143	1.079
Tb-149	0.816	0.758	0.754	0.938	0.874	0.821	1.027	0.962	0.902	1.140	1.077	1.020	1.169	1.105	1.050
Tb-149+D	0.951	0.926	0.923	0.995	0.972	0.950	1.020	1.000	0.978	1.047	1.030	1.012	1.053	1.036	1.019
Eu-150b	0.849	0.788	0.782	0.975	0.906	0.850	1.063	0.995	0.930	1.171	1.103	1.042	1.197	1.129	1.069
Eu-150a	0.862	0.799	0.792	0.989	0.918	0.859	1.075	1.005	0.938	1.179	1.110	1.046	1.204	1.134	1.071
Pm-150	0.810	0.754	0.749	0.933	0.869	0.817	1.021	0.958	0.898	1.136	1.073	1.018	1.166	1.103	1.048
Tb-150	0.825	0.767	0.761	0.948	0.883	0.829	1.037	0.972	0.910	1.149	1.085	1.027	1.178	1.113	1.056

Gd-151	0.966	0.887	0.871	1.097	1.010	0.934	1.176	1.089	1.002	1.252	1.166	1.082	1.266	1.179	1.095
Nd-151	0.830	0.771	0.766	0.954	0.888	0.834	1.043	0.977	0.914	1.154	1.088	1.030	1.181	1.116	1.058
Nd-151+D	0.966	0.944	0.941	1.003	0.983	0.964	1.025	1.007	0.988	1.046	1.031	1.015	1.050	1.036	1.020
Pm-151	0.884	0.819	0.811	1.013	0.940	0.878	1.099	1.026	0.956	1.199	1.127	1.060	1.221	1.149	1.082
Sm-151	1.144	1.024	0.971	1.271	1.139	1.011	1.319	1.186	1.041	1.340	1.206	1.063	1.341	1.208	1.064
Tb-151	0.860	0.797	0.790	0.986	0.916	0.858	1.074	1.004	0.937	1.179	1.110	1.047	1.204	1.135	1.072
Tb-151+D	0.998	0.992	0.991	1.006	1.001	0.996	1.010	1.005	1.000	1.013	1.009	1.005	1.013	1.009	1.005
Eu-152m	0.830	0.771	0.766	0.954	0.888	0.834	1.042	0.976	0.913	1.153	1.088	1.030	1.181	1.116	1.058
Eu-152	0.822	0.764	0.759	0.946	0.880	0.827	1.034	0.969	0.907	1.146	1.082	1.024	1.175	1.110	1.053
Gd-152	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Gd-153	0.965	0.888	0.873	1.098	1.012	0.937	1.178	1.092	1.006	1.254	1.169	1.086	1.267	1.182	1.099
Sm-153	0.960	0.884	0.869	1.092	1.008	0.933	1.173	1.088	1.003	1.251	1.167	1.084	1.264	1.180	1.098
Tb-153	0.904	0.836	0.826	1.034	0.957	0.892	1.118	1.042	0.967	1.211	1.136	1.064	1.231	1.155	1.085
Tb-153+D	0.989	0.962	0.957	1.028	1.004	0.980	1.049	1.027	1.002	1.066	1.046	1.024	1.068	1.049	1.028
Eu-154	0.815	0.758	0.753	0.937	0.873	0.821	1.026	0.962	0.902	1.140	1.077	1.021	1.170	1.106	1.051
Tb-154	0.786	0.731	0.727	0.905	0.844	0.795	0.993	0.933	0.876	1.111	1.051	0.998	1.143	1.082	1.030
Dy-155	0.848	0.787	0.780	0.973	0.904	0.847	1.060	0.992	0.926	1.167	1.099	1.038	1.193	1.125	1.064
Dy-155+D	0.987	0.971	0.967	1.013	0.998	0.983	1.027	1.013	0.998	1.038	1.027	1.014	1.040	1.029	1.016
Eu-155	0.948	0.873	0.860	1.079	0.997	0.925	1.162	1.079	0.996	1.243	1.162	1.082	1.258	1.176	1.098
Ho-155	0.868	0.805	0.797	0.995	0.924	0.865	1.083	1.012	0.944	1.186	1.116	1.051	1.210	1.140	1.076
Ho-155+D	0.909	0.863	0.857	0.994	0.947	0.906	1.048	1.004	0.959	1.108	1.068	1.029	1.122	1.082	1.044
Sm-155	0.927	0.856	0.844	1.058	0.978	0.910	1.142	1.062	0.984	1.229	1.151	1.076	1.247	1.168	1.094
Sm-155+D	0.981	0.952	0.947	1.026	0.999	0.973	1.050	1.026	0.999	1.072	1.050	1.027	1.076	1.054	1.031
Tb-155	0.940	0.867	0.854	1.071	0.990	0.919	1.154	1.072	0.991	1.237	1.157	1.079	1.254	1.172	1.095
Eu-156	0.793	0.739	0.735	0.914	0.852	0.802	1.003	0.942	0.884	1.120	1.060	1.006	1.151	1.091	1.038
Sm-156	0.937	0.863	0.848	1.067	0.984	0.912	1.148	1.066	0.983	1.233	1.151	1.072	1.250	1.168	1.089
Sm-156+D	0.809	0.758	0.754	0.921	0.864	0.817	1.003	0.947	0.893	1.108	1.054	1.005	1.136	1.082	1.035
Tb-156m	0.965	0.888	0.873	1.098	1.012	0.937	1.179	1.092	1.006	1.254	1.169	1.087	1.267	1.182	1.100
Tb-156m+	0.825	0.766	0.761	0.947	0.881	0.829	1.034	0.969	0.909	1.144	1.081	1.024	1.172	1.109	1.053
Tb-156n	0.967	0.890	0.875	1.100	1.014	0.938	1.180	1.094	1.007	1.255	1.170	1.087	1.268	1.183	1.100
Tb-156n+	0.823	0.764	0.759	0.946	0.880	0.827	1.034	0.969	0.908	1.146	1.082	1.024	1.175	1.111	1.054
Tb-156	0.823	0.764	0.759	0.946	0.880	0.827	1.034	0.969	0.908	1.146	1.082	1.024	1.175	1.111	1.054
Dy-157	0.890	0.824	0.815	1.019	0.945	0.883	1.105	1.031	0.960	1.204	1.130	1.063	1.225	1.152	1.085
Eu-157	0.882	0.817	0.808	1.010	0.937	0.876	1.096	1.024	0.953	1.196	1.124	1.057	1.219	1.147	1.080
Ho-157	0.874	0.810	0.802	1.001	0.929	0.869	1.088	1.016	0.947	1.189	1.118	1.052	1.212	1.141	1.076
Ho-157+D	0.950	0.917	0.912	1.008	0.976	0.947	1.042	1.013	0.983	1.078	1.051	1.026	1.084	1.059	1.034
Tb-157	0.977	0.898	0.882	1.110	1.022	0.945	1.189	1.101	1.012	1.261	1.174	1.088	1.273	1.185	1.100
Eu-158	0.809	0.753	0.749	0.932	0.868	0.817	1.021	0.958	0.898	1.136	1.073	1.018	1.165	1.103	1.048



Tb-158	0.828	0.769	0.764	0.952	0.886	0.832	1.040	0.974	0.912	1.151	1.087	1.028	1.179	1.115	1.057
Dy-159	0.973	0.895	0.879	1.106	1.019	0.942	1.186	1.098	1.010	1.259	1.173	1.088	1.271	1.184	1.100
Gd-159	0.896	0.829	0.819	1.025	0.950	0.887	1.111	1.036	0.963	1.207	1.133	1.064	1.228	1.154	1.085
Ho-159	0.901	0.833	0.824	1.030	0.954	0.890	1.116	1.040	0.966	1.210	1.135	1.064	1.230	1.155	1.085
Ho-159+D	0.997	0.988	0.986	1.010	1.002	0.994	1.016	1.009	1.001	1.021	1.015	1.008	1.022	1.016	1.009
Tb-160	0.818	0.761	0.756	0.941	0.877	0.824	1.030	0.966	0.905	1.144	1.080	1.024	1.173	1.109	1.053
Er-161	0.829	0.770	0.766	0.953	0.887	0.833	1.042	0.976	0.913	1.153	1.088	1.030	1.181	1.116	1.058
Er-161+D	1.001	0.995	0.994	1.008	1.003	0.998	1.011	1.006	1.001	1.012	1.009	1.004	1.013	1.009	1.005
Ho-161	1.011	0.924	0.902	1.143	1.047	0.960	1.216	1.120	1.019	1.277	1.181	1.084	1.286	1.190	1.093
Tb-161	1.021	0.932	0.908	1.153	1.054	0.965	1.224	1.125	1.021	1.282	1.183	1.083	1.290	1.191	1.091
Ho-162m	0.835	0.775	0.769	0.959	0.892	0.837	1.047	0.980	0.916	1.156	1.090	1.030	1.183	1.117	1.058
Ho-162m+	0.977	0.964	0.962	0.999	0.987	0.976	1.011	1.001	0.990	1.024	1.015	1.006	1.026	1.018	1.010
Ho-162	0.866	0.802	0.794	0.992	0.921	0.861	1.079	1.007	0.938	1.180	1.109	1.044	1.204	1.133	1.068
Tm-162	0.810	0.753	0.749	0.932	0.869	0.817	1.021	0.957	0.898	1.135	1.073	1.017	1.165	1.102	1.047
Yb-162	0.935	0.862	0.851	1.066	0.985	0.916	1.150	1.069	0.989	1.235	1.155	1.079	1.252	1.172	1.096
Yb-162+D	0.822	0.768	0.764	0.937	0.878	0.828	1.019	0.960	0.905	1.124	1.067	1.016	1.151	1.094	1.044
Ho-164m	0.971	0.893	0.878	1.104	1.017	0.941	1.184	1.097	1.009	1.258	1.172	1.087	1.270	1.184	1.100
Ho-164m+	0.986	0.952	0.945	1.039	1.006	0.974	1.067	1.036	1.003	1.091	1.063	1.034	1.095	1.067	1.039
Ho-164	0.967	0.890	0.875	1.100	1.014	0.939	1.181	1.094	1.008	1.256	1.170	1.087	1.269	1.183	1.100
Dy-165	0.878	0.813	0.805	1.005	0.933	0.872	1.092	1.019	0.949	1.192	1.120	1.054	1.215	1.143	1.077
Er-165	0.967	0.890	0.875	1.100	1.014	0.939	1.181	1.094	1.007	1.256	1.170	1.087	1.268	1.183	1.100
Dy-166	0.954	0.878	0.864	1.086	1.002	0.929	1.167	1.083	0.999	1.246	1.163	1.083	1.261	1.177	1.097
Dy-166+D	0.915	0.876	0.872	0.983	0.946	0.913	1.027	0.992	0.957	1.076	1.045	1.015	1.088	1.057	1.028
Ho-166m	0.839	0.779	0.774	0.964	0.897	0.842	1.053	0.986	0.922	1.163	1.097	1.037	1.190	1.124	1.065
Ho-166	0.843	0.781	0.775	0.967	0.898	0.841	1.054	0.985	0.919	1.159	1.091	1.030	1.185	1.117	1.056
Tm-166	0.804	0.748	0.744	0.926	0.862	0.811	1.014	0.951	0.892	1.129	1.067	1.012	1.159	1.097	1.043
Yb-166	0.959	0.883	0.869	1.092	1.007	0.933	1.173	1.088	1.003	1.251	1.167	1.086	1.265	1.181	1.100
Yb-166+D	0.811	0.757	0.753	0.929	0.867	0.818	1.013	0.953	0.896	1.123	1.064	1.011	1.151	1.093	1.041
Ho-167	0.877	0.813	0.805	1.006	0.933	0.874	1.093	1.021	0.952	1.195	1.124	1.059	1.218	1.147	1.082
Tm-167	0.922	0.851	0.840	1.052	0.974	0.906	1.137	1.058	0.980	1.226	1.148	1.074	1.244	1.166	1.093
Yb-167	0.929	0.857	0.845	1.059	0.979	0.911	1.143	1.063	0.984	1.230	1.150	1.075	1.247	1.167	1.093
Yb-167+D	0.971	0.941	0.936	1.018	0.991	0.964	1.045	1.020	0.993	1.071	1.048	1.025	1.076	1.054	1.031
Er-169	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Lu-169	0.817	0.760	0.755	0.940	0.875	0.822	1.028	0.963	0.902	1.141	1.077	1.020	1.170	1.106	1.050
Lu-169+D	0.982	0.961	0.958	1.013	0.995	0.977	1.031	1.014	0.996	1.046	1.031	1.017	1.048	1.034	1.020
Yb-169	0.928	0.856	0.845	1.058	0.979	0.911	1.143	1.063	0.985	1.230	1.151	1.077	1.247	1.169	1.094
Hf-170	0.881	0.812	0.802	1.007	0.930	0.869	1.093	1.017	0.946	1.194	1.119	1.052	1.217	1.142	1.076
Hf-170+D	0.845	0.795	0.791	0.949	0.894	0.850	1.020	0.968	0.918	1.109	1.060	1.015	1.131	1.083	1.039

Lu-170	0.814	0.757	0.752	0.937	0.872	0.820	1.025	0.961	0.900	1.139	1.076	1.019	1.168	1.105	1.049
Tm-170	0.953	0.876	0.863	1.085	1.000	0.927	1.167	1.081	0.998	1.247	1.163	1.083	1.262	1.178	1.098
Er-171	0.885	0.820	0.812	1.014	0.941	0.880	1.101	1.028	0.958	1.201	1.128	1.062	1.222	1.150	1.084
Er-171+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lu-171	0.857	0.793	0.785	0.982	0.910	0.851	1.068	0.996	0.929	1.173	1.103	1.038	1.199	1.128	1.064
Tm-171	0.966	0.885	0.870	1.097	1.008	0.933	1.178	1.089	1.003	1.255	1.167	1.084	1.268	1.180	1.098
Er-172	0.856	0.794	0.787	0.982	0.913	0.856	1.070	1.001	0.935	1.177	1.109	1.047	1.202	1.134	1.073
Er-172+D	0.895	0.862	0.859	0.960	0.927	0.899	1.002	0.973	0.944	1.053	1.027	1.003	1.065	1.041	1.018
Hf-172	1.027	0.922	0.893	1.152	1.038	0.949	1.223	1.109	1.008	1.287	1.173	1.075	1.298	1.184	1.087
Hf-172+D	0.828	0.772	0.767	0.945	0.883	0.832	1.028	0.968	0.910	1.135	1.075	1.022	1.162	1.103	1.050
Lu-172	0.819	0.761	0.756	0.942	0.877	0.824	1.030	0.966	0.905	1.144	1.080	1.023	1.173	1.109	1.053
Ta-172	0.826	0.767	0.761	0.949	0.882	0.829	1.037	0.971	0.909	1.149	1.084	1.026	1.177	1.112	1.055
Ta-172+D	0.896	0.855	0.851	0.973	0.932	0.897	1.022	0.985	0.947	1.080	1.046	1.014	1.094	1.061	1.030
Tm-172	0.795	0.740	0.736	0.916	0.853	0.803	1.004	0.943	0.885	1.122	1.061	1.007	1.153	1.092	1.039
Hf-173	0.903	0.833	0.822	1.031	0.952	0.888	1.116	1.038	0.964	1.212	1.134	1.064	1.232	1.155	1.085
Hf-173+D	0.983	0.962	0.959	1.015	0.995	0.977	1.031	1.014	0.996	1.046	1.032	1.017	1.049	1.035	1.020
Lu-173	0.934	0.859	0.846	1.064	0.981	0.911	1.147	1.064	0.984	1.233	1.151	1.075	1.250	1.168	1.092
Ta-173	0.859	0.794	0.785	0.984	0.910	0.851	1.070	0.997	0.930	1.176	1.104	1.040	1.201	1.129	1.066
Ta-173+D	0.955	0.915	0.909	1.018	0.980	0.946	1.056	1.021	0.985	1.093	1.061	1.031	1.100	1.069	1.039
Tm-173	0.866	0.803	0.796	0.993	0.923	0.865	1.081	1.011	0.944	1.186	1.116	1.053	1.211	1.141	1.078
Lu-174m	1.014	0.901	0.870	1.134	1.012	0.927	1.206	1.084	0.990	1.279	1.158	1.066	1.293	1.172	1.081
Lu-174m+	0.907	0.857	0.849	0.993	0.942	0.898	1.048	1.001	0.953	1.111	1.068	1.025	1.125	1.083	1.042
Lu-174	0.864	0.798	0.789	0.989	0.915	0.855	1.074	1.001	0.932	1.176	1.104	1.038	1.200	1.128	1.063
Ta-174	0.860	0.796	0.788	0.985	0.914	0.855	1.072	1.001	0.934	1.178	1.107	1.043	1.203	1.132	1.069
Hf-175	0.891	0.823	0.813	1.019	0.942	0.880	1.105	1.028	0.957	1.204	1.128	1.060	1.226	1.150	1.083
Ta-175	0.824	0.765	0.759	0.947	0.880	0.826	1.035	0.968	0.905	1.146	1.080	1.021	1.174	1.108	1.050
Ta-175+D	0.964	0.939	0.935	1.006	0.982	0.961	1.029	1.008	0.987	1.053	1.035	1.017	1.058	1.040	1.023
Tm-175	0.832	0.773	0.768	0.956	0.890	0.836	1.045	0.979	0.916	1.157	1.091	1.032	1.184	1.119	1.061
Tm-175+D	0.995	0.991	0.991	1.000	0.997	0.995	1.003	1.001	0.998	1.006	1.004	1.002	1.007	1.005	1.003
Yb-175	0.880	0.814	0.806	1.008	0.934	0.874	1.095	1.022	0.952	1.196	1.124	1.058	1.219	1.147	1.081
Lu-176m	1.017	0.905	0.874	1.138	1.017	0.932	1.210	1.090	0.995	1.283	1.164	1.072	1.296	1.177	1.086
Lu-176	0.894	0.826	0.817	1.023	0.947	0.884	1.109	1.033	0.961	1.207	1.132	1.064	1.228	1.154	1.086
Ta-176	0.880	0.810	0.800	1.005	0.927	0.866	1.090	1.013	0.942	1.192	1.115	1.048	1.215	1.139	1.073
W-176	0.975	0.886	0.865	1.102	1.004	0.927	1.181	1.083	0.995	1.259	1.162	1.077	1.274	1.177	1.093
W-176+D	0.888	0.822	0.812	1.005	0.932	0.875	1.083	1.012	0.946	1.175	1.106	1.044	1.196	1.127	1.067
Hf-177m	0.886	0.819	0.810	1.014	0.939	0.878	1.100	1.026	0.956	1.201	1.127	1.060	1.223	1.149	1.083
Lu-177m	0.894	0.826	0.816	1.022	0.947	0.884	1.109	1.033	0.961	1.206	1.131	1.063	1.228	1.153	1.085
Lu-177m+	0.999	0.999	0.999	1.000	1.000	0.999	1.001	1.000	1.000	1.001	1.001	1.000	1.001	1.001	1.001

Lu-177	0.918	0.845	0.833	1.046	0.966	0.898	1.131	1.050	0.973	1.223	1.143	1.070	1.243	1.162	1.090
Re-177	0.848	0.783	0.774	0.971	0.898	0.840	1.057	0.985	0.919	1.164	1.093	1.030	1.191	1.119	1.057
Re-177+D	0.911	0.864	0.858	0.992	0.945	0.905	1.044	1.001	0.958	1.102	1.062	1.025	1.115	1.076	1.040
Ta-177	0.966	0.877	0.857	1.092	0.995	0.918	1.171	1.074	0.987	1.252	1.155	1.072	1.267	1.171	1.088
W-177	0.855	0.791	0.783	0.980	0.908	0.850	1.067	0.996	0.929	1.173	1.102	1.040	1.198	1.128	1.066
W-177+D	0.998	0.990	0.989	1.006	1.000	0.994	1.010	1.005	0.999	1.014	1.009	1.004	1.014	1.010	1.005
Yb-177	0.826	0.767	0.762	0.949	0.883	0.829	1.037	0.972	0.909	1.149	1.084	1.026	1.177	1.112	1.054
Yb-177+D	0.986	0.971	0.969	1.007	0.994	0.982	1.019	1.008	0.996	1.030	1.020	1.010	1.032	1.022	1.013
Hf-178m	0.868	0.804	0.797	0.995	0.924	0.865	1.083	1.012	0.944	1.187	1.117	1.052	1.211	1.141	1.077
Lu-178m	0.882	0.816	0.808	1.010	0.936	0.875	1.097	1.023	0.953	1.198	1.125	1.059	1.221	1.148	1.082
Lu-178	0.806	0.748	0.742	0.926	0.861	0.809	1.014	0.950	0.890	1.130	1.066	1.010	1.160	1.096	1.041
Re-178	0.818	0.760	0.754	0.940	0.875	0.821	1.028	0.963	0.901	1.140	1.075	1.017	1.169	1.104	1.047
Re-178+D	0.991	0.982	0.979	1.004	0.995	0.987	1.010	1.002	0.995	1.016	1.010	1.004	1.017	1.011	1.005
Ta-178b	0.888	0.821	0.811	1.016	0.941	0.879	1.102	1.027	0.956	1.202	1.127	1.060	1.224	1.150	1.083
Ta-178a	0.895	0.819	0.805	1.018	0.934	0.869	1.101	1.017	0.943	1.197	1.114	1.043	1.219	1.136	1.066
W-178	1.114	0.958	0.903	1.222	1.057	0.949	1.281	1.116	0.999	1.338	1.173	1.059	1.347	1.183	1.070
W-178+D	0.907	0.837	0.823	1.016	0.941	0.882	1.088	1.015	0.949	1.171	1.101	1.038	1.190	1.120	1.059
Yb-178	0.875	0.809	0.801	1.002	0.929	0.869	1.089	1.016	0.947	1.192	1.120	1.055	1.216	1.144	1.079
Yb-178+D	0.839	0.789	0.783	0.940	0.886	0.842	1.011	0.960	0.910	1.101	1.052	1.008	1.124	1.075	1.033
Hf-179m	0.885	0.817	0.808	1.012	0.937	0.876	1.099	1.024	0.953	1.199	1.125	1.058	1.222	1.148	1.081
Lu-179	0.892	0.826	0.817	1.020	0.947	0.884	1.107	1.033	0.961	1.205	1.132	1.064	1.227	1.154	1.086
Ta-179	1.019	0.910	0.880	1.142	1.024	0.938	1.214	1.097	1.001	1.285	1.168	1.075	1.297	1.181	1.088
W-179	1.026	0.926	0.898	1.153	1.044	0.954	1.225	1.115	1.015	1.287	1.178	1.080	1.297	1.188	1.091
W-179+D	1.007	0.966	0.954	1.047	1.008	0.977	1.068	1.033	1.000	1.087	1.054	1.026	1.090	1.058	1.030
Hf-180m	0.878	0.813	0.805	1.006	0.933	0.872	1.093	1.020	0.951	1.195	1.123	1.057	1.218	1.146	1.081
Os-180	1.197	1.001	0.926	1.294	1.089	0.963	1.340	1.135	1.001	1.381	1.176	1.043	1.388	1.184	1.051
Os-180+D	0.839	0.780	0.775	0.957	0.892	0.840	1.040	0.976	0.917	1.145	1.083	1.028	1.171	1.110	1.055
Re-180	0.830	0.770	0.765	0.954	0.887	0.833	1.042	0.975	0.913	1.154	1.088	1.029	1.182	1.116	1.058
Ta-180m	0.995	0.898	0.874	1.121	1.015	0.934	1.197	1.091	1.000	1.271	1.166	1.078	1.284	1.180	1.092
Ta-180	0.898	0.828	0.818	1.026	0.948	0.885	1.111	1.034	0.961	1.209	1.132	1.063	1.230	1.154	1.085
Hf-181	0.868	0.804	0.796	0.994	0.923	0.864	1.082	1.011	0.943	1.186	1.116	1.052	1.211	1.140	1.077
Os-181	0.852	0.782	0.771	0.973	0.895	0.837	1.058	0.981	0.914	1.166	1.089	1.026	1.193	1.116	1.054
Os-181+D	0.940	0.907	0.902	0.995	0.964	0.936	1.029	1.000	0.972	1.065	1.040	1.017	1.073	1.049	1.027
Re-181	0.856	0.792	0.785	0.981	0.910	0.852	1.068	0.997	0.931	1.174	1.104	1.042	1.200	1.130	1.068
Re-181+D	1.000	0.995	0.993	1.006	1.001	0.997	1.008	1.004	1.000	1.010	1.007	1.003	1.011	1.007	1.004
W-181	1.005	0.903	0.877	1.129	1.019	0.935	1.204	1.094	1.000	1.277	1.167	1.076	1.289	1.180	1.090
Hf-182m	0.860	0.796	0.789	0.986	0.915	0.857	1.073	1.003	0.936	1.179	1.109	1.046	1.204	1.134	1.072
Hf-182	0.891	0.825	0.816	1.020	0.945	0.883	1.107	1.032	0.961	1.206	1.132	1.064	1.227	1.154	1.086

Hf-182+D	0.839	0.788	0.783	0.945	0.889	0.843	1.019	0.966	0.913	1.112	1.061	1.014	1.136	1.085	1.040
Ir-182	0.858	0.790	0.781	0.981	0.906	0.847	1.068	0.993	0.926	1.174	1.100	1.037	1.200	1.126	1.064
Ir-182+D	0.912	0.868	0.862	0.983	0.940	0.905	1.028	0.989	0.952	1.081	1.046	1.014	1.093	1.059	1.028
Os-182	0.930	0.838	0.818	1.050	0.950	0.879	1.130	1.031	0.952	1.224	1.125	1.049	1.245	1.147	1.072
Os-182+D	0.863	0.815	0.810	0.955	0.905	0.864	1.018	0.972	0.926	1.095	1.053	1.013	1.115	1.073	1.034
Re-182b	0.833	0.772	0.766	0.956	0.888	0.833	1.044	0.976	0.913	1.154	1.087	1.027	1.182	1.115	1.056
Re-182a	0.816	0.757	0.752	0.938	0.872	0.819	1.026	0.961	0.900	1.139	1.075	1.018	1.169	1.104	1.048
Ta-182m	0.940	0.859	0.842	1.067	0.977	0.906	1.149	1.059	0.979	1.236	1.148	1.071	1.254	1.166	1.089
Ta-182m+	0.840	0.789	0.784	0.945	0.889	0.843	1.019	0.966	0.914	1.111	1.061	1.014	1.135	1.085	1.040
Ta-182	0.812	0.755	0.750	0.934	0.869	0.817	1.023	0.959	0.898	1.137	1.074	1.017	1.167	1.103	1.048
Hf-183	0.836	0.776	0.771	0.961	0.894	0.839	1.049	0.982	0.919	1.160	1.094	1.034	1.187	1.121	1.062
Hf-183+D	0.976	0.951	0.945	1.014	0.990	0.968	1.035	1.013	0.991	1.054	1.035	1.017	1.058	1.039	1.022
Ta-183	0.923	0.846	0.831	1.050	0.965	0.896	1.133	1.048	0.970	1.225	1.140	1.066	1.244	1.160	1.086
Hf-184	0.931	0.847	0.830	1.055	0.964	0.894	1.137	1.045	0.966	1.228	1.137	1.062	1.248	1.157	1.082
Hf-184+D	0.864	0.808	0.803	0.974	0.914	0.864	1.050	0.991	0.935	1.141	1.085	1.034	1.163	1.107	1.057
Ir-184	0.842	0.776	0.767	0.963	0.890	0.833	1.050	0.977	0.912	1.159	1.087	1.026	1.187	1.114	1.054
Re-184m	0.897	0.815	0.799	1.018	0.928	0.863	1.100	1.011	0.937	1.200	1.111	1.040	1.223	1.135	1.065
Re-184m+	0.889	0.844	0.840	0.972	0.927	0.889	1.027	0.985	0.944	1.093	1.055	1.019	1.108	1.071	1.036
Re-184	0.832	0.772	0.767	0.956	0.889	0.834	1.044	0.977	0.914	1.156	1.090	1.030	1.183	1.117	1.058
Ta-184	0.845	0.784	0.778	0.970	0.902	0.846	1.059	0.990	0.926	1.167	1.100	1.039	1.194	1.126	1.066
Ir-185	0.890	0.797	0.775	1.003	0.903	0.835	1.081	0.981	0.906	1.181	1.082	1.011	1.207	1.108	1.037
Ir-185+D	0.919	0.872	0.864	0.991	0.946	0.908	1.038	0.996	0.956	1.092	1.055	1.021	1.104	1.068	1.035
Os-185	0.862	0.792	0.781	0.984	0.907	0.848	1.070	0.993	0.925	1.177	1.101	1.037	1.203	1.127	1.064
Ta-185	0.915	0.839	0.825	1.041	0.958	0.890	1.125	1.041	0.964	1.218	1.135	1.062	1.238	1.155	1.082
Ta-185+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
W-185	1.077	0.931	0.884	1.187	1.032	0.935	1.252	1.097	0.992	1.318	1.163	1.060	1.330	1.176	1.074
Ir-186a	0.843	0.777	0.768	0.965	0.891	0.834	1.051	0.978	0.912	1.160	1.087	1.026	1.187	1.114	1.054
Ir-186b	0.858	0.788	0.777	0.980	0.902	0.843	1.065	0.988	0.920	1.172	1.095	1.032	1.198	1.122	1.059
Pt-186	0.862	0.792	0.782	0.985	0.908	0.848	1.070	0.993	0.925	1.177	1.101	1.036	1.203	1.127	1.063
Pt-186+D	0.915	0.869	0.861	0.989	0.942	0.905	1.036	0.993	0.953	1.090	1.051	1.018	1.102	1.065	1.032
Re-186m	1.434	1.103	0.969	1.491	1.150	0.982	1.507	1.167	0.995	1.522	1.182	1.011	1.524	1.185	1.013
Re-186m+	1.018	0.942	0.915	1.081	1.009	0.951	1.119	1.051	0.991	1.158	1.096	1.040	1.165	1.104	1.049
Re-186	1.032	0.907	0.870	1.147	1.014	0.925	1.217	1.084	0.986	1.290	1.158	1.062	1.304	1.172	1.077
Ta-186	0.850	0.789	0.783	0.976	0.907	0.851	1.064	0.996	0.930	1.172	1.104	1.043	1.198	1.130	1.069
Ir-187	0.933	0.834	0.809	1.049	0.942	0.869	1.126	1.020	0.938	1.220	1.114	1.036	1.242	1.137	1.060
Re-187	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
W-187	0.899	0.813	0.795	1.018	0.925	0.859	1.100	1.007	0.933	1.201	1.108	1.038	1.225	1.133	1.063
Ir-188	0.812	0.750	0.743	0.931	0.862	0.809	1.018	0.949	0.888	1.131	1.064	1.006	1.162	1.093	1.037

Pt-188	1.035	0.905	0.863	1.147	1.008	0.916	1.215	1.076	0.975	1.289	1.150	1.053	1.305	1.166	1.069
Pt-188+D	0.834	0.775	0.768	0.940	0.877	0.829	1.016	0.955	0.900	1.113	1.056	1.005	1.139	1.081	1.033
Re-188m	1.189	0.986	0.913	1.283	1.071	0.952	1.333	1.121	0.995	1.382	1.171	1.046	1.391	1.180	1.056
Re-188m+	0.953	0.907	0.895	1.009	0.967	0.930	1.045	1.007	0.969	1.086	1.053	1.021	1.096	1.064	1.033
Re-188	0.900	0.819	0.803	1.021	0.932	0.866	1.104	1.015	0.940	1.202	1.114	1.043	1.225	1.137	1.067
W-188	0.943	0.852	0.831	1.065	0.965	0.893	1.145	1.046	0.965	1.236	1.137	1.059	1.255	1.157	1.080
W-188+D	0.902	0.823	0.807	1.020	0.934	0.869	1.101	1.015	0.942	1.196	1.111	1.042	1.218	1.133	1.065
Ir-189	1.176	0.979	0.907	1.271	1.065	0.946	1.321	1.116	0.990	1.372	1.167	1.043	1.382	1.178	1.054
Ir-189+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Os-189m	1.532	1.154	0.993	1.575	1.185	0.994	1.576	1.188	0.994	1.576	1.188	0.994	1.576	1.188	0.994
Pt-189	0.949	0.847	0.821	1.066	0.956	0.880	1.142	1.032	0.948	1.232	1.123	1.042	1.253	1.144	1.063
Pt-189+D	1.034	0.996	0.980	1.048	1.013	0.989	1.054	1.021	0.998	1.058	1.028	1.008	1.059	1.030	1.010
Re-189	0.988	0.877	0.846	1.105	0.985	0.903	1.179	1.059	0.969	1.262	1.143	1.056	1.280	1.161	1.074
Re-189+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Ir-190n	0.881	0.808	0.796	1.005	0.924	0.862	1.090	1.010	0.939	1.193	1.113	1.046	1.217	1.138	1.071
Ir-190n+	0.994	0.990	0.989	1.000	0.996	0.993	1.004	1.000	0.997	1.007	1.004	1.002	1.008	1.005	1.003
Ir-190m	1.513	1.152	0.994	1.560	1.188	0.996	1.563	1.192	0.996	1.562	1.192	0.995	1.562	1.192	0.995
Ir-190m+	0.879	0.807	0.795	1.002	0.923	0.861	1.088	1.008	0.937	1.191	1.112	1.045	1.215	1.136	1.070
Ir-190	0.879	0.807	0.795	1.002	0.923	0.861	1.088	1.008	0.937	1.191	1.112	1.045	1.215	1.136	1.070
Os-190m	0.869	0.801	0.791	0.994	0.918	0.859	1.080	1.005	0.937	1.185	1.111	1.046	1.210	1.136	1.072
Ir-191m	1.201	0.996	0.917	1.294	1.079	0.953	1.340	1.126	0.993	1.386	1.172	1.041	1.395	1.181	1.050
Os-191m	1.380	1.081	0.959	1.446	1.137	0.977	1.468	1.161	0.995	1.489	1.182	1.017	1.493	1.186	1.021
Os-191m+	1.173	0.994	0.922	1.255	1.070	0.956	1.296	1.113	0.994	1.336	1.155	1.038	1.343	1.163	1.047
Os-191	1.195	0.993	0.915	1.289	1.077	0.952	1.336	1.125	0.993	1.383	1.172	1.042	1.391	1.181	1.051
Pt-191	0.987	0.874	0.841	1.102	0.981	0.898	1.175	1.055	0.963	1.258	1.138	1.050	1.277	1.157	1.069
Ir-192m	0.910	0.841	0.832	1.040	0.963	0.899	1.126	1.049	0.975	1.219	1.143	1.073	1.238	1.163	1.092
Ir-192m+	0.890	0.833	0.825	0.998	0.936	0.885	1.071	1.011	0.954	1.155	1.097	1.044	1.173	1.117	1.065
Ir-192	0.871	0.807	0.798	0.998	0.925	0.866	1.086	1.013	0.945	1.190	1.118	1.053	1.213	1.142	1.078
Au-193	1.054	0.918	0.872	1.165	1.020	0.923	1.230	1.086	0.980	1.300	1.156	1.053	1.314	1.170	1.068
Hg-193m	0.877	0.800	0.785	0.997	0.913	0.849	1.080	0.996	0.924	1.183	1.099	1.031	1.208	1.125	1.057
Hg-193m+	1.009	0.987	0.979	1.023	1.003	0.988	1.030	1.012	0.997	1.036	1.020	1.007	1.037	1.021	1.009
Hg-193	1.090	0.940	0.885	1.197	1.038	0.931	1.257	1.098	0.983	1.319	1.161	1.048	1.332	1.174	1.062
Hg-193+D	1.023	0.962	0.939	1.066	1.009	0.965	1.089	1.036	0.991	1.113	1.063	1.023	1.117	1.069	1.029
Os-193	0.945	0.849	0.825	1.064	0.961	0.886	1.142	1.039	0.956	1.233	1.130	1.051	1.253	1.151	1.072
Pt-193m	1.332	1.070	0.956	1.409	1.136	0.977	1.435	1.163	0.998	1.458	1.187	1.022	1.462	1.191	1.026
Pt-193	1.505	1.151	0.994	1.554	1.189	0.996	1.557	1.193	0.997	1.557	1.193	0.996	1.557	1.193	0.996
Au-194	0.835	0.770	0.760	0.956	0.883	0.826	1.041	0.969	0.905	1.151	1.080	1.019	1.179	1.108	1.048
Hg-194	1.464	1.146	0.995	1.524	1.193	1.000	1.529	1.201	1.000	1.528	1.200	1.000	1.528	1.200	1.000

Hg-194+D	0.835	0.770	0.760	0.956	0.883	0.826	1.041	0.969	0.905	1.151	1.080	1.019	1.179	1.108	1.048
Ir-194m	0.855	0.793	0.786	0.981	0.911	0.854	1.069	0.999	0.933	1.176	1.107	1.045	1.202	1.133	1.072
Ir-194	0.851	0.789	0.782	0.976	0.906	0.850	1.064	0.995	0.929	1.172	1.103	1.041	1.197	1.129	1.068
Os-194	1.432	1.116	0.979	1.493	1.166	0.989	1.507	1.181	0.999	1.516	1.190	1.009	1.518	1.192	1.010
Os-194+D	0.853	0.791	0.784	0.976	0.907	0.851	1.063	0.995	0.930	1.170	1.102	1.041	1.195	1.128	1.067
Tl-194m	0.859	0.793	0.784	0.983	0.910	0.851	1.070	0.997	0.929	1.176	1.104	1.040	1.202	1.130	1.067
Tl-194	0.877	0.805	0.793	1.000	0.921	0.859	1.085	1.007	0.936	1.188	1.110	1.043	1.213	1.135	1.068
Au-195m	1.001	0.887	0.851	1.117	0.993	0.906	1.188	1.065	0.969	1.268	1.145	1.053	1.285	1.163	1.070
Au-195m+	1.059	1.003	0.978	1.077	1.025	0.989	1.084	1.035	0.999	1.089	1.043	1.010	1.090	1.045	1.012
Au-195	1.217	1.010	0.927	1.310	1.093	0.961	1.353	1.137	0.997	1.394	1.178	1.040	1.401	1.186	1.048
Hg-195m	1.050	0.912	0.862	1.158	1.011	0.910	1.221	1.074	0.965	1.292	1.146	1.039	1.308	1.162	1.056
Hg-195m+	1.040	0.966	0.936	1.083	1.012	0.960	1.104	1.037	0.985	1.127	1.064	1.016	1.131	1.070	1.023
Hg-195	1.001	0.877	0.836	1.111	0.979	0.889	1.179	1.047	0.949	1.259	1.128	1.032	1.278	1.147	1.052
Hg-195+D	1.059	1.003	0.978	1.078	1.026	0.988	1.085	1.036	0.999	1.090	1.044	1.011	1.090	1.046	1.013
Ir-195m	1.084	0.926	0.868	1.187	1.019	0.913	1.245	1.078	0.965	1.312	1.146	1.035	1.328	1.161	1.051
Ir-195m+	1.001	1.000	1.000	1.001	1.000	1.000	1.001	1.001	1.000	1.002	1.001	1.000	1.002	1.001	1.000
Ir-195	1.196	0.999	0.920	1.291	1.084	0.956	1.337	1.131	0.995	1.382	1.176	1.042	1.390	1.185	1.051
Pb-195m	0.896	0.813	0.796	1.015	0.925	0.859	1.097	1.007	0.932	1.197	1.108	1.037	1.221	1.133	1.062
Pb-195m+	0.947	0.898	0.886	1.006	0.959	0.922	1.042	0.999	0.960	1.084	1.045	1.011	1.094	1.056	1.024
Pt-195m	1.255	1.030	0.936	1.342	1.107	0.966	1.380	1.145	0.997	1.415	1.181	1.034	1.421	1.188	1.041
Tl-195	0.860	0.787	0.773	0.980	0.899	0.837	1.063	0.983	0.912	1.169	1.089	1.022	1.196	1.116	1.050
Tl-195+D	1.012	0.981	0.970	1.030	1.002	0.981	1.038	1.013	0.993	1.046	1.023	1.006	1.048	1.026	1.009
Hg-197m	1.132	0.967	0.901	1.236	1.061	0.943	1.289	1.115	0.989	1.343	1.170	1.045	1.353	1.181	1.057
Hg-197m+	1.081	1.007	0.971	1.109	1.038	0.985	1.120	1.052	0.999	1.129	1.065	1.015	1.131	1.067	1.018
Hg-197	1.223	1.017	0.931	1.316	1.100	0.963	1.357	1.142	0.997	1.396	1.181	1.038	1.403	1.188	1.046
Pt-197m	1.157	0.971	0.898	1.253	1.058	0.937	1.303	1.109	0.981	1.357	1.163	1.037	1.368	1.174	1.049
Pt-197m+	1.049	1.007	0.984	1.062	1.023	0.991	1.067	1.029	0.999	1.070	1.035	1.007	1.071	1.036	1.008
Pt-197	1.249	1.029	0.934	1.337	1.107	0.963	1.374	1.145	0.994	1.409	1.180	1.031	1.416	1.187	1.038
Tl-197	0.902	0.818	0.799	1.022	0.930	0.861	1.102	1.011	0.933	1.199	1.109	1.035	1.223	1.133	1.059
Tl-197+D	1.032	1.003	0.989	1.040	1.014	0.995	1.043	1.018	1.000	1.044	1.022	1.005	1.044	1.022	1.006
Au-198m	0.969	0.872	0.847	1.091	0.986	0.906	1.168	1.063	0.974	1.251	1.147	1.062	1.269	1.165	1.080
Au-198m+	0.941	0.908	0.903	0.996	0.966	0.938	1.031	1.004	0.975	1.069	1.045	1.022	1.078	1.055	1.032
Au-198	0.865	0.801	0.794	0.991	0.921	0.863	1.079	1.009	0.942	1.184	1.115	1.052	1.209	1.140	1.077
Pb-198	0.980	0.869	0.836	1.095	0.976	0.893	1.168	1.049	0.958	1.253	1.134	1.046	1.272	1.153	1.066
Pb-198+D	0.847	0.794	0.786	0.947	0.891	0.845	1.017	0.963	0.912	1.106	1.055	1.009	1.129	1.078	1.034
Tl-198m	0.887	0.811	0.797	1.010	0.926	0.862	1.093	1.010	0.937	1.195	1.112	1.043	1.219	1.137	1.068
Tl-198m+	0.914	0.881	0.877	0.972	0.940	0.913	1.009	0.981	0.952	1.052	1.028	1.005	1.063	1.039	1.017
Tl-198	0.814	0.754	0.747	0.934	0.867	0.814	1.021	0.955	0.893	1.135	1.069	1.011	1.165	1.098	1.042

Au-199	1.009	0.897	0.863	1.127	1.007	0.918	1.198	1.078	0.981	1.274	1.155	1.060	1.290	1.171	1.076
Hg-199m	1.023	0.903	0.863	1.139	1.010	0.917	1.207	1.079	0.977	1.280	1.153	1.054	1.296	1.169	1.070
Pb-199	0.845	0.775	0.764	0.964	0.887	0.829	1.049	0.973	0.906	1.158	1.082	1.019	1.186	1.110	1.048
Pb-199+D	0.995	0.977	0.971	1.013	0.996	0.982	1.022	1.007	0.994	1.030	1.018	1.007	1.032	1.020	1.009
Pt-199	0.867	0.799	0.790	0.991	0.916	0.856	1.078	1.003	0.935	1.183	1.109	1.044	1.208	1.134	1.070
Pt-199+D	1.003	0.966	0.954	1.036	1.002	0.974	1.053	1.022	0.994	1.069	1.041	1.016	1.071	1.044	1.020
Tl-199	0.968	0.866	0.837	1.086	0.976	0.894	1.161	1.051	0.960	1.245	1.136	1.049	1.264	1.155	1.068
Au-200m	0.857	0.793	0.785	0.982	0.910	0.852	1.069	0.998	0.931	1.176	1.106	1.042	1.202	1.131	1.069
Au-200m+	0.995	0.993	0.993	0.999	0.997	0.995	1.001	0.999	0.998	1.003	1.002	1.000	1.003	1.002	1.001
Au-200	0.816	0.759	0.753	0.939	0.874	0.822	1.027	0.963	0.902	1.141	1.078	1.021	1.171	1.107	1.051
Bi-200	0.858	0.790	0.780	0.981	0.905	0.846	1.067	0.991	0.923	1.173	1.099	1.034	1.200	1.125	1.061
Bi-200+D	0.949	0.912	0.904	0.999	0.964	0.935	1.029	0.998	0.969	1.063	1.035	1.011	1.071	1.044	1.020
Pb-200	1.129	0.958	0.893	1.230	1.050	0.936	1.284	1.105	0.983	1.342	1.163	1.043	1.353	1.175	1.055
Pb-200+D	0.864	0.804	0.794	0.969	0.906	0.854	1.041	0.981	0.924	1.132	1.075	1.022	1.155	1.099	1.047
Pt-200	1.153	0.976	0.905	1.253	1.066	0.944	1.303	1.117	0.987	1.355	1.169	1.041	1.365	1.180	1.052
Pt-200+D	0.850	0.797	0.790	0.951	0.896	0.849	1.022	0.970	0.918	1.112	1.064	1.017	1.135	1.087	1.042
Tl-200	0.841	0.776	0.767	0.963	0.891	0.834	1.049	0.978	0.913	1.159	1.088	1.026	1.186	1.116	1.055
Au-201	0.904	0.822	0.803	1.025	0.935	0.866	1.106	1.016	0.939	1.204	1.115	1.041	1.228	1.139	1.066
Bi-201	0.863	0.789	0.775	0.983	0.901	0.840	1.066	0.985	0.915	1.172	1.092	1.026	1.199	1.119	1.053
Bi-201+D	0.969	0.926	0.915	1.017	0.977	0.945	1.045	1.009	0.976	1.075	1.042	1.014	1.082	1.050	1.023
Pb-201	0.902	0.818	0.799	1.022	0.929	0.862	1.103	1.011	0.935	1.201	1.110	1.037	1.225	1.134	1.062
Pb-201+D	1.016	0.997	0.989	1.024	1.008	0.994	1.027	1.012	0.999	1.029	1.016	1.005	1.030	1.016	1.005
Tl-201	1.145	0.977	0.910	1.249	1.072	0.951	1.300	1.124	0.995	1.351	1.175	1.048	1.360	1.185	1.058
Bi-202	0.842	0.776	0.768	0.964	0.891	0.834	1.050	0.978	0.912	1.159	1.088	1.027	1.187	1.116	1.055
Bi-202+D	1.000	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Pb-202m	0.838	0.776	0.769	0.962	0.892	0.837	1.050	0.980	0.916	1.160	1.092	1.032	1.188	1.119	1.060
Pb-202	1.529	1.153	0.993	1.572	1.185	0.995	1.574	1.189	0.995	1.573	1.188	0.994	1.573	1.188	0.994
Pb-202+D	0.905	0.826	0.810	1.028	0.942	0.874	1.111	1.024	0.948	1.208	1.123	1.050	1.231	1.145	1.073
Tl-202	0.905	0.826	0.810	1.028	0.942	0.874	1.111	1.024	0.948	1.208	1.123	1.050	1.231	1.145	1.073
Bi-203	0.836	0.769	0.759	0.956	0.881	0.824	1.041	0.967	0.902	1.152	1.078	1.017	1.180	1.107	1.046
Bi-203+D	1.002	0.984	0.979	1.015	1.000	0.987	1.022	1.008	0.996	1.028	1.016	1.006	1.029	1.017	1.008
Hg-203	0.915	0.837	0.821	1.040	0.953	0.886	1.123	1.037	0.961	1.219	1.133	1.060	1.239	1.154	1.081
Pb-203	1.014	0.892	0.854	1.128	0.997	0.908	1.197	1.067	0.970	1.275	1.146	1.051	1.292	1.163	1.069
Po-203	0.845	0.776	0.765	0.965	0.888	0.829	1.050	0.974	0.906	1.158	1.083	1.019	1.186	1.111	1.048
Po-203+D	0.906	0.854	0.844	0.985	0.932	0.890	1.036	0.987	0.942	1.097	1.051	1.013	1.111	1.067	1.030
Tl-204	1.192	1.005	0.925	1.291	1.093	0.961	1.335	1.139	0.998	1.377	1.181	1.042	1.385	1.189	1.050
Bi-205	0.828	0.761	0.751	0.947	0.873	0.816	1.032	0.958	0.894	1.143	1.070	1.010	1.172	1.099	1.040
Pb-205	1.526	1.153	0.993	1.570	1.186	0.995	1.572	1.189	0.995	1.571	1.189	0.995	1.571	1.189	0.995

Po-205	0.844	0.775	0.764	0.964	0.888	0.829	1.049	0.973	0.906	1.158	1.083	1.020	1.186	1.111	1.048
Po-205+D	0.905	0.862	0.856	0.972	0.931	0.897	1.016	0.978	0.943	1.068	1.034	1.005	1.081	1.048	1.020
Bi-206	0.837	0.772	0.764	0.959	0.887	0.830	1.045	0.973	0.909	1.156	1.085	1.024	1.183	1.112	1.052
Tl-206	1.103	0.939	0.877	1.204	1.032	0.920	1.260	1.088	0.969	1.321	1.150	1.033	1.335	1.164	1.047
At-207	0.853	0.782	0.770	0.973	0.895	0.834	1.057	0.979	0.910	1.164	1.087	1.022	1.191	1.114	1.049
At-207+D	0.917	0.872	0.864	0.985	0.941	0.906	1.029	0.989	0.951	1.080	1.044	1.012	1.093	1.058	1.026
Bi-207	0.848	0.780	0.769	0.969	0.893	0.834	1.055	0.979	0.912	1.163	1.088	1.025	1.190	1.115	1.053
Po-207	0.852	0.782	0.770	0.972	0.894	0.835	1.057	0.980	0.912	1.164	1.088	1.024	1.192	1.116	1.052
Tl-207	0.819	0.761	0.757	0.942	0.877	0.825	1.031	0.967	0.906	1.145	1.082	1.025	1.174	1.111	1.054
Tl-208	0.773	0.720	0.716	0.891	0.831	0.783	0.979	0.920	0.864	1.098	1.040	0.988	1.130	1.072	1.021
Pb-209	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Tl-209	0.807	0.749	0.744	0.928	0.863	0.810	1.016	0.951	0.891	1.131	1.067	1.011	1.161	1.096	1.042
Tl-209+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bi-210m	0.909	0.832	0.817	1.035	0.949	0.882	1.118	1.033	0.957	1.214	1.130	1.058	1.235	1.151	1.080
Bi-210m+	1.004	0.997	0.995	1.007	1.001	0.997	1.008	1.003	0.999	1.010	1.005	1.001	1.010	1.005	1.002
Bi-210	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Bi-210+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Pb-210	1.414	1.128	0.990	1.484	1.186	0.999	1.495	1.199	1.004	1.498	1.202	1.007	1.499	1.203	1.008
Pb-210+D	0.958	0.903	0.890	1.046	0.992	0.940	1.101	1.051	0.994	1.157	1.112	1.060	1.167	1.123	1.073
Po-210	0.824	0.766	0.762	0.948	0.883	0.830	1.037	0.972	0.911	1.151	1.087	1.029	1.179	1.115	1.058
At-211	1.226	1.025	0.935	1.321	1.108	0.966	1.359	1.148	0.997	1.394	1.184	1.034	1.401	1.191	1.041
At-211+D	0.983	0.973	0.971	0.996	0.988	0.980	1.004	0.997	0.990	1.014	1.009	1.004	1.016	1.012	1.007
Bi-211	0.899	0.824	0.811	1.024	0.941	0.876	1.108	1.026	0.952	1.207	1.125	1.055	1.229	1.148	1.078
Bi-211+D	0.964	0.949	0.947	0.990	0.976	0.964	1.005	0.994	0.982	1.023	1.014	1.004	1.027	1.018	1.009
Pb-211	0.847	0.783	0.776	0.971	0.900	0.844	1.058	0.988	0.923	1.167	1.098	1.036	1.194	1.125	1.064
Pb-211+D	0.938	0.896	0.889	1.004	0.963	0.928	1.045	1.008	0.971	1.089	1.055	1.024	1.099	1.066	1.035
Po-211	0.829	0.770	0.765	0.953	0.887	0.834	1.042	0.976	0.914	1.154	1.090	1.031	1.183	1.118	1.060
Bi-212	0.866	0.788	0.772	0.984	0.898	0.834	1.066	0.980	0.909	1.171	1.087	1.019	1.198	1.113	1.047
Bi-212+D	0.802	0.753	0.749	0.907	0.854	0.810	0.982	0.932	0.882	1.082	1.034	0.990	1.108	1.060	1.018
Pb-212	1.005	0.892	0.856	1.121	1.000	0.911	1.192	1.071	0.974	1.270	1.149	1.055	1.287	1.166	1.072
Pb-212+D	0.808	0.754	0.748	0.915	0.856	0.809	0.993	0.936	0.883	1.096	1.042	0.993	1.123	1.069	1.022
Po-212	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Bi-213	0.873	0.805	0.795	0.998	0.923	0.862	1.084	1.009	0.940	1.188	1.114	1.048	1.213	1.138	1.073
Bi-213+D	0.950	0.931	0.929	0.984	0.966	0.950	1.004	0.989	0.974	1.027	1.015	1.003	1.033	1.021	1.010
Po-213	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Po-213+D	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Bi-214	0.797	0.742	0.738	0.918	0.856	0.805	1.007	0.945	0.887	1.124	1.062	1.008	1.155	1.093	1.040
Bi-214+D	1.000	1.000	0.999	1.001	1.000	1.000	1.001	1.001	1.000	1.001	1.001	1.000	1.001	1.001	1.000



Pb-214	0.935	0.846	0.824	1.056	0.959	0.885	1.135	1.038	0.956	1.227	1.131	1.052	1.248	1.152	1.073
Pb-214+D	0.826	0.775	0.770	0.931	0.877	0.831	1.007	0.954	0.903	1.104	1.053	1.007	1.129	1.078	1.034
Po-214	0.825	0.766	0.762	0.949	0.883	0.830	1.038	0.972	0.911	1.151	1.087	1.029	1.179	1.115	1.058
Po-214+D	1.060	0.933	0.889	1.174	1.039	0.940	1.238	1.103	0.995	1.301	1.167	1.061	1.313	1.179	1.074
At-215	0.870	0.805	0.797	0.996	0.924	0.865	1.083	1.011	0.943	1.188	1.117	1.052	1.212	1.141	1.077
At-215+D	0.885	0.813	0.802	1.009	0.929	0.867	1.093	1.015	0.944	1.195	1.117	1.049	1.218	1.141	1.073
Po-215	0.863	0.800	0.792	0.990	0.919	0.860	1.077	1.007	0.940	1.183	1.113	1.050	1.208	1.138	1.076
Po-215+D	0.866	0.798	0.789	0.990	0.915	0.855	1.076	1.001	0.933	1.181	1.107	1.043	1.206	1.133	1.069
At-216	1.210	1.012	0.928	1.305	1.098	0.962	1.347	1.141	0.997	1.387	1.181	1.038	1.395	1.189	1.046
At-216+D	0.787	0.730	0.724	0.905	0.841	0.791	0.992	0.929	0.871	1.109	1.047	0.993	1.140	1.078	1.025
Po-216	0.824	0.766	0.762	0.948	0.883	0.830	1.037	0.972	0.911	1.151	1.087	1.029	1.179	1.115	1.058
Po-216+D	0.808	0.746	0.737	0.926	0.856	0.802	1.011	0.943	0.881	1.124	1.057	0.999	1.154	1.087	1.029
At-217	0.874	0.804	0.792	0.998	0.920	0.859	1.083	1.006	0.936	1.187	1.111	1.044	1.212	1.135	1.070
At-217+D	0.858	0.793	0.784	0.982	0.909	0.850	1.068	0.996	0.929	1.175	1.103	1.039	1.201	1.128	1.066
At-218	1.406	1.124	0.988	1.478	1.183	0.997	1.489	1.196	1.003	1.494	1.201	1.008	1.495	1.202	1.009
At-218+D	0.799	0.744	0.739	0.920	0.857	0.806	1.008	0.946	0.888	1.124	1.062	1.008	1.155	1.093	1.040
Po-218	0.822	0.764	0.760	0.945	0.880	0.828	1.034	0.970	0.909	1.149	1.085	1.027	1.177	1.113	1.056
Po-218+D	0.818	0.758	0.751	0.939	0.872	0.817	1.026	0.959	0.897	1.140	1.072	1.015	1.169	1.102	1.045
Rn-218	0.843	0.782	0.776	0.967	0.900	0.845	1.056	0.989	0.925	1.166	1.100	1.039	1.193	1.127	1.067
Rn-218+D	1.053	0.936	0.895	1.158	1.034	0.943	1.215	1.093	0.995	1.270	1.151	1.056	1.281	1.162	1.067
Fr-219	0.891	0.819	0.805	1.016	0.936	0.871	1.100	1.020	0.947	1.200	1.121	1.051	1.223	1.144	1.075
Fr-219+D	0.890	0.821	0.810	1.008	0.933	0.873	1.088	1.014	0.947	1.182	1.110	1.046	1.204	1.132	1.069
Rn-219	0.896	0.824	0.811	1.022	0.942	0.877	1.106	1.027	0.953	1.205	1.126	1.056	1.228	1.149	1.079
Rn-219+D	0.906	0.855	0.848	0.993	0.941	0.898	1.049	1.001	0.954	1.114	1.070	1.028	1.129	1.085	1.045
Fr-220	1.285	1.066	0.958	1.374	1.143	0.980	1.401	1.172	1.000	1.423	1.194	1.023	1.427	1.198	1.027
Fr-220+D	0.789	0.732	0.726	0.906	0.842	0.792	0.992	0.930	0.872	1.108	1.047	0.993	1.139	1.077	1.025
Rn-220	0.849	0.788	0.781	0.974	0.906	0.849	1.063	0.995	0.930	1.172	1.104	1.043	1.198	1.130	1.070
Rn-220+D	0.808	0.746	0.737	0.926	0.856	0.802	1.011	0.943	0.881	1.124	1.057	0.999	1.154	1.087	1.029
Fr-221	0.972	0.876	0.848	1.093	0.989	0.906	1.169	1.064	0.972	1.251	1.147	1.059	1.269	1.165	1.077
Fr-221+D	0.877	0.818	0.810	0.985	0.922	0.869	1.058	0.996	0.939	1.145	1.087	1.034	1.167	1.108	1.056
Fr-222	0.938	0.865	0.853	1.070	0.989	0.919	1.153	1.072	0.992	1.238	1.158	1.081	1.254	1.174	1.098
Fr-222+D	0.977	0.922	0.907	1.044	0.989	0.944	1.081	1.030	0.983	1.121	1.073	1.031	1.129	1.082	1.041
Ra-222	0.889	0.821	0.810	1.017	0.939	0.877	1.102	1.026	0.954	1.202	1.126	1.058	1.224	1.149	1.081
Ra-222+D	1.019	0.957	0.935	1.072	1.012	0.964	1.099	1.043	0.994	1.124	1.072	1.027	1.128	1.077	1.033
Rn-222	0.853	0.792	0.785	0.979	0.910	0.853	1.068	0.999	0.934	1.175	1.108	1.045	1.201	1.133	1.072
Rn-222+D	0.818	0.758	0.751	0.939	0.872	0.817	1.026	0.959	0.897	1.140	1.072	1.015	1.169	1.102	1.045
Ac-223	1.353	1.101	0.976	1.433	1.169	0.990	1.450	1.188	1.001	1.461	1.199	1.012	1.463	1.201	1.014
Fr-223	1.178	1.013	0.933	1.283	1.107	0.966	1.326	1.149	0.999	1.362	1.186	1.037	1.369	1.193	1.044

Fr-223+D	0.959	0.879	0.855	1.057	0.973	0.906	1.117	1.037	0.963	1.186	1.108	1.040	1.202	1.125	1.057
Ra-223	1.051	0.924	0.876	1.165	1.028	0.925	1.227	1.091	0.979	1.294	1.158	1.049	1.308	1.173	1.063
Ra-223+D	0.930	0.885	0.876	1.000	0.957	0.918	1.045	1.005	0.965	1.097	1.061	1.026	1.108	1.074	1.040
Ac-224	1.091	0.955	0.898	1.203	1.058	0.942	1.260	1.115	0.990	1.316	1.171	1.049	1.327	1.183	1.060
Ac-224+D	0.831	0.773	0.764	0.935	0.873	0.823	1.009	0.949	0.894	1.106	1.049	0.999	1.131	1.075	1.026
Ra-224	0.934	0.852	0.833	1.059	0.969	0.895	1.139	1.049	0.967	1.229	1.140	1.061	1.249	1.160	1.081
Ra-224+D	0.809	0.747	0.739	0.926	0.857	0.803	1.011	0.943	0.881	1.123	1.056	0.999	1.153	1.086	1.029
Ac-225	1.254	1.056	0.956	1.350	1.140	0.980	1.381	1.171	1.003	1.404	1.195	1.027	1.409	1.200	1.032
Ac-225+D	0.884	0.818	0.806	0.998	0.926	0.867	1.075	1.005	0.939	1.169	1.101	1.039	1.191	1.123	1.063
Ra-225	1.198	1.033	0.953	1.305	1.129	0.985	1.346	1.170	1.016	1.375	1.199	1.046	1.379	1.203	1.050
Ra-225+D	0.904	0.828	0.811	1.020	0.938	0.871	1.097	1.016	0.942	1.189	1.110	1.040	1.212	1.131	1.062
Ac-226	1.036	0.922	0.878	1.154	1.031	0.928	1.218	1.095	0.984	1.285	1.162	1.053	1.299	1.176	1.067
Ac-226+D	1.003	0.991	0.985	1.013	1.002	0.991	1.018	1.008	0.997	1.023	1.014	1.004	1.024	1.015	1.006
Ra-226	1.017	0.907	0.868	1.136	1.016	0.921	1.204	1.085	0.981	1.276	1.157	1.057	1.292	1.173	1.072
Ra-226+D	0.818	0.758	0.751	0.938	0.871	0.817	1.025	0.959	0.897	1.138	1.072	1.014	1.168	1.101	1.045
Th-226	1.227	1.046	0.952	1.328	1.135	0.979	1.362	1.169	1.004	1.388	1.195	1.031	1.393	1.200	1.036
Th-226+D	0.973	0.908	0.888	1.052	0.986	0.931	1.100	1.038	0.979	1.152	1.094	1.041	1.163	1.106	1.054
Ac-227	1.312	1.101	0.986	1.406	1.182	1.002	1.426	1.203	1.013	1.433	1.210	1.020	1.434	1.211	1.021
Ac-227+D	0.993	0.886	0.850	1.111	0.994	0.904	1.180	1.064	0.964	1.258	1.143	1.046	1.276	1.161	1.064
Pa-227	1.230	1.050	0.958	1.332	1.141	0.984	1.366	1.175	1.009	1.390	1.199	1.034	1.394	1.203	1.038
Pa-227+D	0.964	0.881	0.855	1.063	0.976	0.905	1.123	1.039	0.962	1.194	1.112	1.040	1.210	1.129	1.057
Ra-227	1.084	0.951	0.893	1.196	1.053	0.936	1.252	1.109	0.983	1.308	1.165	1.041	1.320	1.177	1.053
Ra-227+D	0.995	0.918	0.890	1.075	0.996	0.930	1.119	1.045	0.975	1.169	1.097	1.032	1.180	1.109	1.045
Th-227	1.119	0.973	0.907	1.228	1.071	0.946	1.279	1.123	0.988	1.329	1.173	1.040	1.340	1.184	1.051
Th-227+D	0.964	0.892	0.870	1.049	0.977	0.916	1.101	1.032	0.967	1.160	1.094	1.035	1.174	1.109	1.050
Ac-228	0.860	0.790	0.776	0.981	0.903	0.839	1.064	0.986	0.914	1.168	1.091	1.023	1.194	1.118	1.050
Ac-228+D	0.878	0.833	0.827	0.956	0.911	0.873	1.008	0.966	0.926	1.071	1.034	0.999	1.087	1.050	1.018
Pa-228	0.915	0.830	0.805	1.034	0.940	0.863	1.110	1.016	0.931	1.202	1.109	1.027	1.225	1.132	1.051
Pa-228+D	0.888	0.845	0.838	0.960	0.917	0.881	1.007	0.968	0.931	1.066	1.031	1.000	1.081	1.047	1.017
Ra-228	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ra-228+D	0.830	0.764	0.753	0.949	0.876	0.817	1.033	0.961	0.894	1.142	1.071	1.009	1.171	1.099	1.038
Th-228	1.313	1.100	0.985	1.406	1.181	1.000	1.425	1.201	1.012	1.434	1.208	1.019	1.435	1.210	1.021
Th-228+D	0.809	0.747	0.738	0.927	0.857	0.803	1.012	0.943	0.881	1.125	1.057	0.999	1.155	1.087	1.030
Th-229	1.234	1.048	0.954	1.333	1.136	0.980	1.367	1.170	1.005	1.393	1.195	1.032	1.398	1.200	1.037
Th-229+D	0.937	0.874	0.856	1.022	0.959	0.903	1.077	1.016	0.957	1.141	1.084	1.031	1.156	1.100	1.048
Pa-230	0.915	0.830	0.805	1.034	0.940	0.864	1.110	1.017	0.932	1.203	1.111	1.029	1.226	1.134	1.052
Pa-230+D	1.000	1.000	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001	1.000	1.000	1.001	1.000	1.000
Th-230	1.338	1.116	0.993	1.428	1.193	1.005	1.444	1.209	1.014	1.447	1.212	1.016	1.447	1.212	1.016

U-230	1.302	1.102	0.990	1.399	1.187	1.005	1.420	1.207	1.017	1.426	1.212	1.022	1.426	1.212	1.023
U-230+D	1.037	0.925	0.881	1.144	1.025	0.929	1.203	1.085	0.981	1.265	1.148	1.048	1.279	1.162	1.061
Pa-231	1.243	1.058	0.961	1.344	1.146	0.985	1.374	1.177	1.007	1.396	1.198	1.028	1.400	1.202	1.032
Th-231	1.271	1.084	0.983	1.373	1.174	1.003	1.399	1.200	1.020	1.410	1.210	1.030	1.411	1.211	1.031
U-231	1.232	1.058	0.966	1.337	1.151	0.992	1.370	1.183	1.015	1.390	1.203	1.035	1.393	1.206	1.038
Np-232	0.894	0.818	0.799	1.016	0.931	0.860	1.096	1.011	0.932	1.193	1.109	1.033	1.216	1.133	1.057
Pa-232	0.873	0.801	0.786	0.994	0.915	0.849	1.076	0.997	0.922	1.178	1.100	1.029	1.203	1.125	1.054
Th-232	1.342	1.118	0.995	1.432	1.195	1.006	1.447	1.210	1.014	1.450	1.212	1.015	1.450	1.213	1.016
U-232	1.313	1.108	0.993	1.409	1.192	1.008	1.428	1.210	1.018	1.432	1.213	1.021	1.432	1.214	1.021
U-232+D	0.810	0.747	0.738	0.927	0.858	0.803	1.013	0.944	0.882	1.126	1.058	0.999	1.155	1.087	1.030
Np-233	1.148	1.002	0.931	1.260	1.102	0.967	1.306	1.149	1.004	1.345	1.188	1.044	1.352	1.195	1.052
Pa-233	1.028	0.918	0.874	1.147	1.027	0.924	1.211	1.091	0.980	1.278	1.158	1.049	1.292	1.173	1.064
U-233	1.309	1.105	0.991	1.405	1.189	1.006	1.425	1.208	1.017	1.430	1.212	1.021	1.430	1.213	1.022
Np-234	0.839	0.772	0.758	0.958	0.883	0.821	1.041	0.965	0.896	1.148	1.073	1.007	1.176	1.102	1.036
Pa-234m	0.860	0.790	0.776	0.981	0.903	0.839	1.063	0.986	0.913	1.167	1.090	1.022	1.194	1.117	1.049
Pa-234m+	0.989	0.981	0.979	1.000	0.993	0.986	1.006	1.000	0.993	1.013	1.008	1.002	1.014	1.009	1.004
Pa-234	0.882	0.808	0.791	1.004	0.921	0.853	1.084	1.002	0.925	1.184	1.103	1.029	1.209	1.127	1.054
Pu-234	1.166	1.017	0.942	1.278	1.117	0.976	1.321	1.160	1.010	1.354	1.194	1.044	1.360	1.199	1.050
Pu-234+D	0.847	0.782	0.768	0.960	0.889	0.829	1.039	0.967	0.901	1.140	1.069	1.007	1.166	1.097	1.034
Th-234	1.229	1.055	0.964	1.333	1.148	0.989	1.367	1.181	1.014	1.388	1.202	1.035	1.391	1.205	1.038
Th-234+D	0.893	0.833	0.818	0.989	0.925	0.870	1.051	0.991	0.931	1.130	1.073	1.019	1.150	1.094	1.041
U-234	1.314	1.109	0.994	1.410	1.193	1.008	1.429	1.211	1.018	1.433	1.214	1.021	1.433	1.214	1.021
Np-235	1.290	1.099	0.992	1.391	1.187	1.009	1.413	1.209	1.021	1.418	1.214	1.026	1.418	1.214	1.026
Pu-235	1.160	1.012	0.938	1.271	1.112	0.972	1.315	1.156	1.006	1.350	1.190	1.042	1.356	1.197	1.049
Pu-235+D	1.007	1.003	1.000	1.008	1.004	1.000	1.008	1.005	1.001	1.008	1.005	1.001	1.008	1.005	1.001
U-235	1.040	0.927	0.883	1.159	1.036	0.932	1.223	1.100	0.987	1.288	1.165	1.055	1.301	1.178	1.068
U-235+D	1.023	1.008	0.998	1.029	1.015	1.000	1.029	1.016	1.002	1.029	1.016	1.003	1.028	1.016	1.003
Np-236a	1.205	1.043	0.958	1.313	1.139	0.986	1.350	1.175	1.013	1.374	1.199	1.038	1.378	1.204	1.042
Np-236a+	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Np-236b	1.152	1.004	0.932	1.263	1.104	0.967	1.308	1.149	1.002	1.345	1.186	1.041	1.352	1.194	1.049
Np-236b+	1.001	1.001	1.000	1.002	1.001	1.000	1.002	1.001	1.000	1.002	1.001	1.000	1.002	1.001	1.000
Pu-236	1.290	1.100	0.992	1.391	1.188	1.009	1.413	1.210	1.022	1.418	1.214	1.026	1.418	1.214	1.026
U-236	1.316	1.110	0.994	1.411	1.193	1.008	1.430	1.211	1.018	1.433	1.214	1.020	1.433	1.214	1.020
Am-237	1.002	0.901	0.864	1.123	1.012	0.916	1.190	1.080	0.975	1.262	1.152	1.049	1.277	1.168	1.065
Am-237+D	1.022	1.005	0.995	1.030	1.015	0.998	1.032	1.018	1.002	1.033	1.019	1.004	1.033	1.019	1.004
Np-237	1.244	1.067	0.973	1.348	1.159	0.996	1.379	1.190	1.018	1.396	1.206	1.034	1.398	1.208	1.037
Np-237+D	1.024	0.928	0.888	1.126	1.024	0.932	1.180	1.079	0.982	1.237	1.137	1.043	1.249	1.150	1.057
Pu-237	1.202	1.042	0.958	1.311	1.139	0.987	1.348	1.176	1.015	1.373	1.200	1.039	1.376	1.204	1.043

U-237	1.127	0.991	0.926	1.242	1.094	0.965	1.291	1.144	1.004	1.333	1.186	1.048	1.341	1.194	1.056
Am-238	0.883	0.809	0.790	1.004	0.921	0.852	1.084	1.001	0.923	1.182	1.100	1.026	1.207	1.125	1.051
Am-238+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cm-238	1.139	1.002	0.935	1.254	1.106	0.973	1.302	1.153	1.010	1.339	1.191	1.049	1.346	1.198	1.055
Cm-238+D	0.888	0.818	0.800	0.999	0.923	0.859	1.073	0.997	0.925	1.162	1.089	1.022	1.185	1.112	1.045
Np-238	0.864	0.793	0.778	0.985	0.906	0.841	1.066	0.988	0.914	1.169	1.091	1.021	1.195	1.118	1.048
Pu-238	1.290	1.100	0.993	1.392	1.189	1.009	1.414	1.210	1.022	1.418	1.214	1.026	1.418	1.214	1.026
U-238	1.316	1.110	0.994	1.412	1.193	1.008	1.430	1.211	1.018	1.434	1.214	1.020	1.433	1.214	1.020
U-238+D	0.931	0.842	0.814	1.048	0.951	0.869	1.120	1.024	0.934	1.208	1.111	1.025	1.230	1.133	1.047
Am-239	1.117	0.985	0.922	1.233	1.089	0.962	1.284	1.140	1.003	1.327	1.184	1.048	1.335	1.192	1.056
Am-239+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Np-239	1.081	0.959	0.905	1.199	1.066	0.949	1.255	1.123	0.996	1.307	1.175	1.051	1.318	1.186	1.061
Pu-239	1.288	1.099	0.992	1.389	1.187	1.009	1.412	1.209	1.022	1.417	1.214	1.026	1.417	1.214	1.026
U-239	1.076	0.955	0.903	1.194	1.063	0.948	1.251	1.120	0.996	1.304	1.174	1.051	1.315	1.184	1.062
U-239+D	1.060	0.969	0.927	1.143	1.049	0.961	1.181	1.090	0.997	1.215	1.126	1.038	1.222	1.134	1.045
Am-240	0.887	0.811	0.792	1.007	0.923	0.852	1.086	1.003	0.923	1.184	1.101	1.025	1.208	1.125	1.050
Am-240+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cm-240	1.268	1.090	0.990	1.374	1.183	1.010	1.399	1.208	1.025	1.405	1.214	1.031	1.405	1.214	1.031
Cm-240+D	1.125	1.047	0.996	1.161	1.084	1.004	1.169	1.093	1.011	1.170	1.095	1.013	1.170	1.095	1.013
Np-240m	0.929	0.844	0.818	1.049	0.956	0.875	1.124	1.030	0.941	1.212	1.119	1.033	1.234	1.141	1.055
Np-240	0.905	0.826	0.805	1.026	0.939	0.865	1.104	1.018	0.935	1.198	1.112	1.033	1.221	1.135	1.056
Pu-240	1.290	1.100	0.993	1.391	1.188	1.009	1.413	1.210	1.022	1.418	1.214	1.026	1.418	1.214	1.026
U-240	1.275	1.093	0.990	1.379	1.184	1.009	1.403	1.208	1.023	1.410	1.214	1.029	1.410	1.214	1.029
U-240+D	0.930	0.845	0.819	1.049	0.956	0.876	1.123	1.030	0.941	1.210	1.118	1.033	1.232	1.140	1.055
Am-241	1.238	1.068	0.976	1.345	1.163	1.000	1.376	1.193	1.021	1.391	1.208	1.036	1.393	1.210	1.038
Cm-241	0.990	0.892	0.857	1.110	1.004	0.910	1.179	1.072	0.969	1.253	1.147	1.046	1.270	1.163	1.063
Cm-241+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Pu-241	1.265	1.082	0.982	1.368	1.173	1.002	1.394	1.199	1.019	1.405	1.209	1.029	1.407	1.211	1.031
Pu-241+D	1.076	0.994	0.952	1.140	1.058	0.977	1.167	1.088	1.003	1.190	1.113	1.031	1.194	1.118	1.036
Am-242m	1.252	1.082	0.988	1.361	1.178	1.010	1.388	1.205	1.027	1.397	1.213	1.035	1.397	1.214	1.035
Am-242m+	1.144	1.015	0.947	1.241	1.104	0.976	1.278	1.141	1.005	1.304	1.168	1.033	1.309	1.173	1.039
Am-242	1.214	1.056	0.971	1.325	1.154	0.998	1.360	1.188	1.022	1.377	1.206	1.040	1.379	1.208	1.042
Am-242+D	1.006	1.002	1.000	1.008	1.004	1.000	1.008	1.005	1.001	1.008	1.005	1.001	1.008	1.005	1.001
Cm-242	1.268	1.090	0.990	1.374	1.183	1.010	1.399	1.208	1.025	1.405	1.214	1.031	1.405	1.214	1.031
Pu-242	1.290	1.100	0.993	1.391	1.188	1.009	1.413	1.210	1.022	1.418	1.214	1.026	1.418	1.214	1.026
Am-243	1.113	0.983	0.925	1.230	1.090	0.966	1.283	1.143	1.009	1.328	1.187	1.055	1.335	1.195	1.063
Am-243+D	1.061	0.968	0.926	1.145	1.050	0.961	1.183	1.091	0.997	1.219	1.129	1.039	1.226	1.136	1.046
Cm-243	1.104	0.975	0.915	1.220	1.080	0.956	1.273	1.133	0.999	1.319	1.180	1.048	1.328	1.189	1.057



Cm-250+D	0.864	0.795	0.781	0.985	0.908	0.844	1.068	0.992	0.918	1.170	1.094	1.025	1.196	1.120	1.051
Es-250	0.913	0.834	0.811	1.034	0.946	0.870	1.111	1.023	0.937	1.201	1.113	1.031	1.223	1.136	1.054
Es-250+D	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cf-251	1.121	0.992	0.930	1.238	1.098	0.969	1.289	1.147	1.009	1.329	1.187	1.050	1.336	1.195	1.057
Es-251	1.116	0.992	0.933	1.236	1.100	0.973	1.287	1.150	1.013	1.327	1.190	1.054	1.333	1.197	1.060
Cf-252	1.241	1.077	0.987	1.352	1.175	1.010	1.381	1.204	1.029	1.390	1.213	1.038	1.391	1.213	1.038
Fm-252	1.221	1.068	0.984	1.335	1.170	1.010	1.368	1.201	1.031	1.380	1.212	1.042	1.380	1.213	1.042
Fm-252+D	1.164	1.056	0.992	1.226	1.117	1.007	1.240	1.133	1.018	1.244	1.137	1.023	1.244	1.137	1.023
Cf-253	1.240	1.077	0.987	1.351	1.175	1.010	1.381	1.204	1.029	1.390	1.213	1.038	1.390	1.213	1.038
Cf-253+D	1.165	1.032	0.961	1.268	1.127	0.989	1.303	1.162	1.015	1.325	1.182	1.038	1.329	1.187	1.041
Es-253	1.219	1.064	0.979	1.332	1.165	1.005	1.365	1.197	1.027	1.379	1.209	1.040	1.380	1.211	1.041
Es-253+D	1.000	0.999	0.999	1.001	1.000	0.999	1.001	1.000	1.000	1.001	1.001	1.000	1.002	1.001	1.001
Fm-253	1.098	0.979	0.925	1.218	1.089	0.968	1.273	1.143	1.010	1.317	1.186	1.056	1.324	1.194	1.063
Fm-253+D	1.001	1.000	1.000	1.002	1.001	1.000	1.002	1.001	1.000	1.002	1.001	1.000	1.002	1.001	1.000
Cf-254	1.241	1.077	0.987	1.352	1.175	1.010	1.382	1.204	1.029	1.391	1.213	1.037	1.391	1.214	1.038
Es-254m	0.871	0.803	0.791	0.995	0.920	0.856	1.079	1.004	0.931	1.181	1.107	1.038	1.206	1.132	1.063
Es-254m+	1.000	1.000	1.000	1.001	1.000	1.000	1.001	1.000	1.000	1.001	1.000	1.000	1.001	1.000	1.000
Es-254	1.233	1.073	0.984	1.345	1.172	1.008	1.376	1.202	1.028	1.387	1.212	1.038	1.387	1.213	1.039
Es-254+D	0.832	0.772	0.764	0.954	0.885	0.829	1.039	0.971	0.906	1.147	1.081	1.021	1.176	1.109	1.049
Fm-254	1.220	1.067	0.984	1.334	1.169	1.010	1.368	1.201	1.031	1.380	1.212	1.042	1.380	1.213	1.043
Fm-254+D	1.100	1.034	0.994	1.138	1.074	1.005	1.147	1.085	1.013	1.150	1.088	1.017	1.150	1.089	1.017
Fm-255	1.250	1.084	0.988	1.359	1.181	1.009	1.387	1.207	1.026	1.395	1.214	1.034	1.396	1.214	1.034
Fm-257	1.109	0.986	0.929	1.229	1.095	0.970	1.281	1.147	1.011	1.323	1.187	1.053	1.330	1.195	1.061
Fm-257+D	1.001	1.000	1.000	1.002	1.001	1.000	1.002	1.001	1.000	1.002	1.001	1.000	1.002	1.001	1.000
Md-257	1.035	0.933	0.893	1.158	1.047	0.942	1.222	1.109	0.995	1.282	1.169	1.057	1.293	1.181	1.069
Md-257+D	1.049	0.994	0.966	1.097	1.042	0.986	1.115	1.064	1.005	1.128	1.078	1.023	1.130	1.081	1.027
Md-258	1.202	1.057	0.980	1.319	1.162	1.009	1.355	1.197	1.032	1.370	1.210	1.047	1.371	1.211	1.047
Md-258+D	0.834	0.773	0.765	0.957	0.887	0.829	1.042	0.973	0.906	1.151	1.083	1.021	1.179	1.111	1.049