

NOTE: (a) One curie equals 3.7E+10 Becquerels

NOTE: (b) Estimated releases from unmonitored sources

NOTE: (c) Includes separations, waste management, and tritium facilities

NOTE: (d) Savannah River National Laboratory

Data Table 4-2 Radioactive Atmospheric Releases by Source

Sample Measurement Section

2014 Radioactive Atmospheric Releases by Source: Units are Curies^(a)

Radionuclide	Half-Life	Calculated ^(b)	Reactors	Separations ^(c)	SRNL ^(d)	Total
Gases and Vapors						
H-3 (oxide)	12.35y	2.35E+02	9.04E+02	2.26E+04		2.38E+04
H-3 (elemental)	12.35y			3.49E+03		3.49E+03
H-3 Total	12.35y	2.35E+02	9.04E+02	2.61E+04		2.73E+04
C-14	5730y	1.83E-06		2.08E-01		2.08E-01
Kr-85	10.72y			6.46E+03		6.46E+03
I-129	1.57E7y	6.22E-05		2.14E-03	2.01E-06	2.21E-03
Particles						
Ag-110m	249.9d	1.48E-11				1.48E-11
Am-241	432.2y	1.42E-05	0.00E+00	4.87E-06		1.91E-05
Am-242m	152y	6.19E-10				6.19E-10
Am-243	7380y	1.25E-08				1.25E-08
Ce-141	32.501d	4.94E-11				4.94E-11
Ce-144	284.3d	6.50E-06				6.50E-06
Cf-249	350.6y	3.74E-08				3.74E-08
Cf-251	898y	3.04E-08				3.04E-08
Cm-242	162.8d	5.12E-10				5.12E-10
Cm-243	28.5y	3.45E-08				3.45E-08
Cm-244	18.11y	2.79E-07	0.00E+00	1.52E-07		4.31E-07
Cm-245	8500y	2.97E-08				2.97E-08
Cm-246	4730y	4.90E-09				4.90E-09
Cm-247	1.56E7y	3.30E-08				3.30E-08
Co-60	5.271y	4.30E-06	0.00E+00	0.00E+00	0.00E+00	4.30E-06
Cs-134	2.062y	4.31E-07				4.31E-07
Cs-137	30.0y	4.27E-03	3.43E-07	1.27E-02	0.00E+00	1.69E-02
Eu-152	13.33y	5.43E-07				5.43E-07
Eu-154	8.8y	7.19E-07				7.19E-07
Eu-155	4.96y	2.22E-06				2.22E-06
F-18	109.77m	2.00E-02				2.00E-02
Mn-54	312.5d	4.84E-07				4.84E-07
Nb-94	2.03E4y	2.42E-07				2.42E-07
Nb-95	35.15d	3.63E-07				3.63E-07
Ni-59	7.5E4y	2.91E-07				2.91E-07
Ni-63	96y	2.00E-06				2.00E-06
Np-237	2.14E6y	7.09E-06	0.00E+00	0.00E+00		7.09E-06
Pa-233	27.0d	1.42E-06				1.42E-06
Pb-212	10.64h	8.43E-07				8.43E-07

2014 Radioactive Atmospheric Releases by Source: Units are Curies^(a)

Radionuclide	Half-Life	Calculated^(b)	Reactors	Separations^(c)	SRNL^(d)	Total
Pb-214	26.8m	8.84E-13				8.84E-13
Pm-147	2.6234y	2.89E-06				2.89E-06
Pm-148m	41.3d	1.90E-12				1.90E-12
Pr-144	17.28m	2.00E-08				2.00E-08
Pu-236	2.851y	1.83E-10				1.83E-10
Pu-238	87.74y	3.23E-05	3.18E-11	1.02E-05		4.25E-05
Pu-239	24065y	3.17E-05	2.12E-11	1.10E-05		4.27E-05
Pu-240	6537y	7.73E-06				7.73E-06
Particles						
Pu-241	14.4y	2.09E-04				2.09E-04
Pu-242	3.763E5y	1.56E-08				1.56E-08
Ra-226	1600y	2.73E-07				2.73E-07
Ra-228	5.75y	2.65E-07				2.65E-07
Rh-106	29.9s	1.19E-08				1.19E-08
Ru-103	39.28d	5.11E-10				5.11E-10
Ru-106	368.2d	3.04E-06				3.04E-06
Sb-125	2.77y	1.28E-06				1.28E-06
Sb-126	12.4d	1.70E-07				1.70E-07
Se-79	65000y	4.90E-09				4.90E-09
Sm-151	90y	2.89E-06				2.89E-06
Sn-123	129.2d	6.66E-12				6.66E-12
Sn-126	1.0E5y	1.70E-07				1.70E-07
Sr-89	50.5d	5.18E-10				5.18E-10
Sr-90	29.12y	9.47E-05	0.00E+00	3.18E-06		9.79E-05
Tc-99	2.13E5y	1.94E-06				1.94E-06
Te-127	9.35h	1.04E-11				1.04E-11
Te-129	69.6m	1.05E-12				1.05E-12
Th-228	1.9131y	2.17E-09	0.00E+00	0.00E+00		2.17E-09
Th-229	7340y	9.28E-10				9.28E-10
Th-230	7.7E4y	9.19E-11	5.07E-09	6.75E-07		6.80E-07
Th-231	25.52h	2.12E-04				2.12E-04
Th-232	1.405E10y	8.12E-12	1.15E-09	3.28E-09		4.44E-09
Tl-208	3.07m	1.41E-06				1.41E-06
U-232	72y	3.19E-09				3.19E-09
U-233	1.585E5y	3.93E-07				3.93E-07
U-234	2.445E5y	6.10E-07	1.41E-09	8.77E-06		9.38E-06
U-235	703.8E6y	5.68E-09	0.00E+00	2.21E-07		2.27E-07
U-236	2.3415E7y	3.01E-08				3.01E-08
U-238	4.468E9y	2.11E-07	1.18E-09	1.27E-05		1.29E-05
Y-90	64.0h	9.47E-05				9.47E-05
Y-91	58.51d	7.98E-10				7.98E-10
Zn-65	243.9d	1.96E-06				1.96E-06
Zr-95	63.98d	1.22E-07				1.22E-07
Unidentified alpha	N/A	1.03E-04	1.24E-07	0.00E+00	6.85E-07	1.04E-04
Unidentified beta	N/A	1.42E-03	8.39E-05	6.40E-04	1.95E-06	2.15E-03