

Fissionable/Fissile Isotope Properties

<https://nuclearweaponarchive.org/Nwfaq/Nfaq12.html>

Isotope	Half-Life (years)	Primary Decay Mode	Spontaneous Fission Rate - SF (F/sec/kg)	Fission Cross Section - sigma (barns, fission spectrum avg)	SF Neutron Multiplicity - nu _{SF} (n/fission)	Fission Spectrum Neutron Multiplicity - nu _{FS} (n/fission)	Critical Mass - M _c (kg)	Decay Heat - Q (W/kg)	Specific Activity (curies/kg)
Th-232	1.405 x 10 ¹⁰	Alpha 4.083 MeV	<5 x 10 ⁻⁵	0.0785	-	2.16	None	2.654 x 10 ⁻⁶	1.097 x 10 ⁻⁴
Pa-231	32,760	Alpha 5.149 MeV	<5	0.834	-	2.457	>188	1.442	47.23
U-232	68.9	Alpha 5.414 MeV	2 x 10 ⁻³	2.013	2	3.296	>5	717.6	22,360
U-233	159,200	Alpha 4.909 MeV	-	1.946	-	2.649	16	0.2804	9.636
U-234	245,500	Alpha 4.859 MeV	3.9	1.223	1.8	2.578	>41	0.1792	6.222
U-235	7.038 x 10 ⁸	Alpha 4.679 MeV	5.6 x 10 ⁻³	1.235	2.0	2.6055	48	5.994 x 10 ⁻⁵	2.161 x 10 ⁻³
U-236	2.342 x 10 ⁷	Alpha 4.572 MeV	2.30	0.594	1.8	2.526	>167	1.753 x 10 ⁻³	0.06467
U-238	4.468 x 10 ⁹	Alpha 4.270 MeV	5.51	0.308	1.97 +- 0.07	2.6010	None	8.508 x 10 ⁻⁶	3.361 x 10 ⁻⁴
Np-237	2.144 x 10 ⁶	Alpha 4.959 MeV	< 0.05	1.335	2	2.889	75-105	0.02068	0.7034
Pu-238	87.7	Alpha 5.593 MeV	1.204 x 10 ⁶	1.994	2.28 +- 0.10	3.148	9	5.678 x 10 ⁵	17,120
Pu-239	24,110	Alpha 5.245 MeV	10.1	1.800	2.9	3.1231	10.5	1.929	62.03
Pu-240	65,640	Alpha 5.256 MeV	478,000	1.357	2.189 +- 0.026	3.061	40	7.07	227
Pu-241	14.35	Beta 0.021 MeV	<0.8	1.648	-	3.142	12	129.4	1.033 x 10 ⁵
Pu-242	373,300	Alpha 4.984 MeV	805,000	1.127	2.28 +- 0.13	3.070	95, range 75-100	0.1169	3.956
Am-241	432.2	Alpha 5.638 MeV	500	1.378	2	3.457	83.5	114.7	3,431
Cf-251	898	Alpha 6.176 MeV	-	2.430	-	4.560	1.94	58.05	1,586