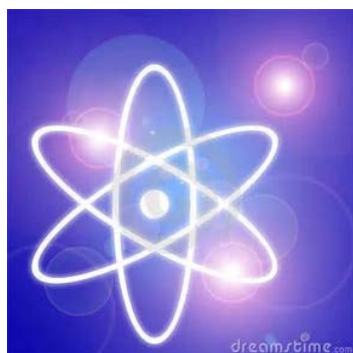


NUCLIDE CHARTS FOR YOUR INFORMATION



Activation Product Nuclides		
Nuclide	Common Name	Half Life
³⁸ Ar	Argon-38	Stable
³⁹ Ar	Argon-39	269.0 y
⁴⁰ Ar	Argon-40	Stable
⁴¹ Ar	Argon-41	109.0 m
¹⁰ Be	Beryllium-10	1.51 E6 y
²⁰⁹ Bi	Bismuth-209	Stable
¹⁰ B	Boron-10	Stable
¹¹² Cd	Cadmium-112	Stable
^{113m} Cd	Cadmium-113m	14.1 y
¹³ C	Carbon-13	Stable
¹⁴ C	Carbon-14	5730 y
³⁵ Cl	Chlorine-35	Stable
³⁶ Cl	Chlorine-36	3.01 E5 y
⁵⁹ Co	Cobalt-59	Stable
⁶⁰ Co	Cobalt-60	5.271 y
² H	Deuterium	Stable
⁵⁵ Fe	Iron-55	2.73 y
²⁰⁴ Pb	Lead-204	Stable
²⁰⁵ Pb	Lead-205	17.3 E6 y
⁶ Li	Lithium-6	Stable
⁷ Li	Lithium-7	Stable
⁹² Mo	Molybdenum-92	Stable
⁹³ Mo	Molybdenum-93	Stable
⁹⁸ Mo	Molybdenum-98	Stable
⁵⁸ Ni	Nickel-58	Stable
⁵⁹ Ni	Nickel-59	7.60 E4 y
⁹³ Nb	Niobium-93	Stable
^{93m} Nb	Niobium-93m	16.13 y
⁹⁴ Nb	Niobium-94	2.03 E5 y
²¹⁰ N	Nitrogen-14	Stable
²¹⁰ Po	Polonium-210	138.38 d
¹⁰⁷ Ag	Silver-107	Stable
^{108m} Ag	Silver-108m	418 y
²³ Na	Sodium-23	Stable
²⁴ Na	Sodium-24	41.96 h
³⁵ S	Sulfur-35	87.51 d
⁹⁹ Tc	Technetium-99	2.13 E5 y
¹²⁰ Sn	Tin-120	Stable
¹²³ Sn	Tin-123m	40.06 m
³ H	Tritium	12.3 y

Normal Operation		
Nuclide	Common Name	Half Life
²⁴¹ Am	Americium-241	432.7 y
²³⁷ Np	Neptunium-237	2.14 E4 y
²³⁸ P	Phosphorus-238	87.7 y
²³⁹ Pu	Plutonium-239	2.41 E4 y
²⁴⁰ Pu	Plutonium-240	6560 y
²³⁴ U	Uranium-234	2.46 E5 y
²³⁵ U	Uranium-235	25.0 m
²³⁸ U	Uranium-238	4.47 E9 y

Fission Products – FAILED Fuel Pellets – Typically Found In the Fuel Pool Water			
Nuclide	Common Name	Half Life	Fission Yield
¹²⁵ Sb	Antimony-125	2.76 y	0.0297%
^{113m} Cd	Cadium-113m	14.1 y	0.0003%
¹³⁴ Cs	Cesium-134	2.065 y	6.7896%
¹³⁷ Cs	Cesium-137	30.17 y	6.0899%
¹⁵⁵ Eu	Europium-155	4.76 y	0.0330%
¹²⁹ I	Iodine-129	1.57 E7 y	0.6576%
⁸⁵ Kr	Krypton-85	10.78 y	0.2717%
¹⁰⁷ Pd	Palladium-107	6.5 E6 y	0.1629%
¹⁴⁷ Pm	Promethium-147	2.62 y	2.2713%
¹⁰⁶ Ru	Ruthenium-106	373.6 d	0.3912%
¹⁵¹ Sm	Samarium-151	90 y	0.4203%
⁷⁹ Se	Selenium-79	3.27 E5 y	0.0508%
⁹⁰ Sr	Strontium-90	28.9 y	5.7518%
¹²⁶ Sn	Tin-126	2.30 E5 y	0.0236%
⁹³ Zr	Zirconium-93	1.53 E6 y	6.2956%



Likely Dirty Bomb Materials		
Nuclide	Common Name	Half Life
²⁴¹ Am	Americium-241	432.7 y
²⁵² Cf	Californium-252	2.638 y
¹³⁷ Cs	Cesium-137	30.17 y
⁶⁰ Co	Cobalt-60	5.271 y
¹²⁵ I	Iodine-125	60.1 d
¹³¹ I	Iodine-131	8.04 d
¹³⁴ I	Iodine-134	52.6 m
¹⁹² Ir	Iridium-192	73.83 d
¹⁰³ Pd	Palladium-103	16.991 d
³² P	Phosphorus-32	14.28 d
²³⁸ Pu	Plutonium-238	87.7 y
²³⁹ Pu	Plutonium-239	2.41 E4 y
²¹⁰ Po	Polonium-210	138.38 d
²²⁶ Ra	Radium-226	1600 y
⁹⁰ Sr	Strontium-90	29.1 y
³ H	Tritium	12.3 y
²³⁵ U	Uranium-235	7.04 E8 y
²³⁸ U	Uranium-238	4.47 E9 y
⁹⁰ Y	Yttrium-90	64.1 h

Medical Radioisotopes		
Nuclide	Common Name	Half Life
⁵¹ Cr	Chromium-51	27.7 d
¹⁸ F	Fluorine-18	1.830 h
⁶⁷ Ga	Gallium-67	3.2612 d
¹¹¹ In	Indium-111	2.8047 d
¹²³ I	Iodine-123	13.27 h
⁹⁹ Mo	Molybdenum-99	67 h
¹⁵³ Sm	Samarium-153	43.27 h
⁷⁵ Se	Selenium-75	119.78 d
⁸⁹ Sr	Strontium-89	50.52 d
^{99m} Tc	Technetium-99m	6.01 h
²⁰¹ Tl	Thallium-201	72.912 h
¹³³ Xe	Xenon-133	5.243 d



Natural Occurrence, Industrial, and Other		
Nuclide	Common Name	Half Life
¹³³ Ba	Barium-133	10.52 y
¹⁰⁹ Cd	Cadmium-109	1.264 y
²⁵² Cf	Californium-252	2.638 y
¹⁴ C	Carbon-14	5730 y
⁵⁷ Co	Cobalt-57	271.8 d
¹⁵² Eu	Europium-152	13.537 y
⁸⁵ Kr	Krypton-85	10.73 y
⁵⁴ Mn	Manganese-54	312.2 d
²³⁷ Np	Neptunium-237	2.14 E6 y
¹⁵ N	Nitrogen-15	Stable
⁴⁰ K	Potassium-40	1.28 E9 y
²² Na	Sodium-22	2.605 y
³⁵ S	Sulfur-35	87.51 d
²³² Th & progeny	Thorium-232	1.40 E10 y
²³⁸ U & progeny	Uranium-238	4.47 E9 y
⁶⁵ Zn	Zinc-65	243.8 d