```
(*Nuclear Species Experimental Data*)
isotopeName = "Pu-240";
databaseName = "JENDL-5";

atomicNumber = 94;(*Atomic number*)
neutronNumber = 147;(*Compound nucleus neutron number*)
(*Calculation Data Range*)

energyPattern = 3;(*Input required*)(*energyPattern=1;
Data at 0.0253eV*)(*energyPattern=2;
Data at 0.0253eV,500keV*)(*energyPattern=3;
Data at 0.0253eV,500keV,14MeV*)(*energyPattern=4;
Data at 500keV*)



(*Average Number of Prompt Neutrons*)
promptNeutrons1 = 2.86;(*0.0253 eV*)
promptNeutrons2 = 3.236;(*500 keV*)
promptNeutrons3 = 4.893;(*14 MeV*)

(*Neutron Separation Energy*)
neutronSeparationEnergy = 5241.5 / 1000;

(*Charge Distribution Experimental Data JENDL-5*)
yieldData0253eV = {{23, 2.6132200 * 10^(-18)}, {24, 4.1857714 * 10^(-14)},
   {25, 1.6543503 * 10^(-11)}, {26, 1.1559905 * 10^(-09)},
   {27, 1.8970924 * 10^(-08)}, {28, 3.2690005 * 10^(-07)}, {29, 3.1604322 * 10^(-06)},
   {30, 3.8567061 * 10^(-05)}, {31, 2.4983899 * 10^(-04)}, {32, 1.4996459 * 10^(-03)},
   {33, 4.6717159 * 10^(-03)}, {34, 1.3908622 * 10^(-02)}, {35, 2.1441010 * 10^(-02)},
   {36, 4.7287310 * 10^(-02)}, {37, 6.3253316 * 10^(-02)}, {38, 1.1609629 * 10^(-01)},
   {39, 1.2215956 * 10^(-01)}, {40, 1.7451881 * 10^(-01)}, {41, 1.3965402 * 10^(-01)},
   {42, 1.5669002 * 10^(-01)}, {43, 8.1989896 * 10^(-02)}, {44, 5.1190025 * 10^(-02)},
   {45, 3.4755042 * 10^(-03)}, {46, 1.1368033 * 10^(-03)}, {47, 7.5310615 * 10^(-04)},
   {48, 7.9216666 * 10^(-04)}, {49, 3.3749134 * 10^(-03)}, {50, 4.8328457 * 10^(-02)},
   {51, 8.060210^(-02)}, {52, 1.6466126 * 10^(-01)}, {53, 1.4398792 * 10^(-01)},
   {54, 1.6835672 * 10^(-01)}, {55, 1.2359917 * 10^(-01)}, {56, 1.1697970 * 10^(-01)},
   {57, 6.2925422 * 10^(-02)}, {58, 4.6145192 * 10^(-02)}, {59, 2.1188518 * 10^(-02)},
   {60, 1.2645155 * 10^(-02)}, {61, 4.2719392 * 10^(-03)}, {62, 1.7305881 * 10^(-03)},
   {63, 3.5352356 * 10^(-04)}, {64, 3.6674212 * 10^(-05)}, {65, 2.7336900 * 10^(-06)},
   {66, 2.7919051 * 10^(-07)}, {67, 1.9553814 * 10^(-08)}, {68, 6.5499338 * 10^(-10)},
   {69, 5.9028674 * 10^(-12)}, {70, 8.8733584 * 10^(-15)}, {71, 0}};

yieldData500keV = {{23, 1.566810^(-17)}, {24, 2.2763960 * 10^(-13)},
   {25, 9.1569549 * 10^(-11)}, {26, 5.0803667 * 10^(-09)},
   {27, 5.7331879 * 10^(-08)}, {28, 5.7520415 * 10^(-07)}, {29, 6.8263912 * 10^(-06)},
   {30, 7.1481595 * 10^(-05)}, {31, 4.2570010 * 10^(-04)}, {32, 2.0811067 * 10^(-03)},
   {33, 4.9235076 * 10^(-03)}, {34, 1.2468259 * 10^(-02)}, {35, 2.0896146 * 10^(-02)},
   {36, 4.5378300 * 10^(-02)}, {37, 6.0305418 * 10^(-02)}, {38, 1.1496600 * 10^(-01)},
   {39, 1.2230502 * 10^(-01)}, {40, 1.7589580 * 10^(-01)}, {41, 1.5185694 * 10^(-01)},
   {42, 1.6150016 * 10^(-01)}, {43, 7.8200393 * 10^(-02)}, {44, 4.2552357 * 10^(-02)},
   {45, 3.6932628 * 10^(-03)}, {46, 1.4227981 * 10^(-03)}, {47, 1.1943598 * 10^(-03)},
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{48, 1.5982194 * 10^(-03)}, {49, 4.7903763 * 10^(-03)}, {50, 4.7921998 * 10^(-02)},
{51, 8.2123399 * 10^(-02)}, {52, 1.6166979 * 10^(-01)}, {53, 1.4855200 * 10^(-01)},
{54, 1.6255441 * 10^(-01)}, {55, 1.2169414 * 10^(-01)}, {56, 1.1608306 * 10^(-01)},
{57, 6.4938685 * 10^(-02)}, {58, 4.5864162 * 10^(-02)}, {59, 2.1964968 * 10^(-02)},
{60, 1.2921246 * 10^(-02)}, {61, 4.7134147 * 10^(-03)}, {62, 1.9549016 * 10^(-03)},
{63, 4.1218847 * 10^(-04)}, {64, 8.4094998 * 10^(-05)}, {65, 1.1604264 * 10^(-05)},
{66, 2.4796601 * 10^(-06)}, {67, 4.0459452 * 10^(-07)}, {68, 3.2026887 * 10^(-08)},
{69, 5.2240244 * 10^(-10)}, {70, 9.4774777 * 10^(-13)}, {71, 0}};

yieldData14MeV = {{23, 4.1565400 * 10^(-14)}, {24, 9.6591549 * 10^(-11)},
{25, 1.7401295 * 10^(-08)}, {26, 5.1706825 * 10^(-07)}, {27, 4.5009844 * 10^(-06)},
{28, 3.2129836 * 10^(-05)}, {29, 1.8545857 * 10^(-04)}, {30, 7.9024789 * 10^(-04)},
{31, 2.3399705 * 10^(-03)}, {32, 5.1863111 * 10^(-03)}, {33, 1.0298347 * 10^(-02)},
{34, 1.8332679 * 10^(-02)}, {35, 3.0267427 * 10^(-02)}, {36, 4.5184123 * 10^(-02)},
{37, 6.4691292 * 10^(-02)}, {38, 8.5761555 * 10^(-02)}, {39, 1.0785615 * 10^(-01)},
{40, 1.2581010 * 10^(-01)}, {41, 1.3068764 * 10^(-01)}, {42, 1.1937163 * 10^(-01)},
{43, 9.4427302 * 10^(-02)}, {44, 6.8790651 * 10^(-02)}, {45, 4.3166629 * 10^(-02)},
{46, 3.1205501 * 10^(-02)}, {47, 2.9778279 * 10^(-02)}, {48, 3.2946413 * 10^(-02)},
{49, 4.5162536 * 10^(-02)}, {50, 6.8059041 * 10^(-02)}, {51, 9.7143249 * 10^(-02)},
{52, 1.1558329 * 10^(-01)}, {53, 1.3118732 * 10^(-01)}, {54, 1.2317066 * 10^(-01)},
{55, 1.1315718 * 10^(-01)}, {56, 8.5198327 * 10^(-02)}, {57, 6.3710089 * 10^(-02)},
{58, 4.4495936 * 10^(-02)}, {59, 2.9312239 * 10^(-02)}, {60, 1.8329093 * 10^(-02)},
{61, 1.0242668 * 10^(-02)}, {62, 4.9402861 * 10^(-03)}, {63, 2.0529506 * 10^(-03)},
{64, 7.6069623 * 10^(-04)}, {65, 2.5770102 * 10^(-04)}, {66, 8.7801993 * 10^(-05)},
{67, 2.6360656 * 10^(-05)}, {68, 6.9694017 * 10^(-06)}, {69, 7.1340790 * 10^(-07)},
{70, 1.3885853 * 10^(-08)}, {71, 3.2156600 * 10^(-11)}};
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