```
(*Nuclear Species Experimental Data*)
isotopeName = "Pu-239";
databaseName = "JENDL-5";

atomicNumber = 94;(*Atomic number*)
neutronNumber = 146;(*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 = 2.875;(*0.0253 eV*)
promptNeutrons2 = 3.242;(*500 keV*)
promptNeutrons3 = 4.891;(*14 MeV*)

(*Neutron Separation Energy*)
neutronSeparationEnergy = 6534.2 / 1000;

(*Charge Distribution Experimental Data JENDL-5*)
yieldData0253eV = {{23, 0}, {24, 7.3166381 * 10^(-15)},
    {25, 5.4676717 * 10^(-12)}, {26, 7.1437793 * 10^(-10)},
    {27, 1.6420293 * 10^(-08)}, {28, 2.6412800 * 10^(-07)}, {29, 2.9996494 * 10^(-06)},
    {30, 2.7200965 * 10^(-05)}, {31, 2.4485330 * 10^(-04)}, {32, 2.3063278 * 10^(-03)},
    {33, 6.6478051 * 10^(-03)}, {34, 1.2872625 * 10^(-02)}, {35, 2.3876773 * 10^(-02)},
    {36, 4.2930053 * 10^(-02)}, {37, 6.4980796 * 10^(-02)}, {38, 1.3411421 * 10^(-01)},
    {39, 9.3592048 * 10^(-02)}, {40, 1.9483798 * 10^(-01)}, {41, 1.4291186 * 10^(-01)},
    {42, 1.5968751 * 10^(-01)}, {43, 7.6504895 * 10^(-02)}, {44, 3.9327891 * 10^(-02)},
    {45, 3.7988931 * 10^(-03)}, {46, 9.4151286 * 10^(-04)}, {47, 7.6307376 * 10^(-04)},
    {48, 7.9412287 * 10^(-04)}, {49, 2.7625400 * 10^(-03)}, {50, 4.0437365 * 10^(-02)},
    {51, 8.4456172 * 10^(-02)}, {52, 1.7051646 * 10^(-01)}, {53, 1.5230823 * 10^(-01)},
    {54, 1.3237486 * 10^(-01)}, {55, 1.3979118 * 10^(-01)}, {56, 1.2632551 * 10^(-01)},
    {57, 5.7512686 * 10^(-02)}, {58, 4.7009220 * 10^(-02)}, {59, 2.5038581 * 10^(-02)},
    {60, 1.4007102 * 10^(-02)}, {61, 4.4550660 * 10^(-03)}, {62, 1.4849786 * 10^(-03)},
    {63, 3.0752744 * 10^(-04)}, {64, 4.4053820 * 10^(-05)}, {65, 4.3575618 * 10^(-06)},
    {66, 3.5636091 * 10^(-07)}, {67, 1.6307005 * 10^(-08)}, {68, 6.2807326 * 10^(-10)},
    {69, 9.6641601 * 10^(-12)}, {70, 2.6652547 * 10^(-14)}, {71, 0}};

yieldData500keV = {{23, 4.6846300 * 10^(-18)}, {24, 1.0147280 * 10^(-13)},
    {25, 5.8906585 * 10^(-11)}, {26, 6.2047814 * 10^(-09)}, {27, 1.4250115 * 10^(-07)},
    {28, 1.8243963 * 10^(-06)}, {29, 1.2491091 * 10^(-05)}, {30, 6.8411383 * 10^(-05)},
    {31, 4.2565291 * 10^(-04)}, {32, 1.9283323 * 10^(-03)}, {33, 5.7783508 * 10^(-03)},
    {34, 1.4623292 * 10^(-02)}, {35, 2.3497763 * 10^(-02)}, {36, 4.8117047 * 10^(-02)},
    {37, 6.3694259 * 10^(-02)}, {38, 1.1550384 * 10^(-01)}, {39, 1.2977772 * 10^(-01)},
    {40, 1.5690674 * 10^(-01)}, {41, 1.6166132 * 10^(-01)}, {42, 1.4919441 * 10^(-01)},
    {43, 8.3995741 * 10^(-02)}, {44, 3.8065370 * 10^(-02)}, {45, 4.2932437 * 10^(-03)},
    {46, 1.4722034 * 10^(-03)}, {47, 1.2727381 * 10^(-03)}, {48, 1.3801714 * 10^(-03)},
    {49, 4.2680381 * 10^(-03)}, {50, 4.0115407 * 10^(-02)}, {51, 7.7756789 * 10^(-02)},
    {52, 1.5137970 * 10^(-01)}, {53, 1.5838174 * 10^(-01)}, {54, 1.6293329 * 10^(-01)},
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    {55, 1.3253491 * 10^(-01)}, {56, 1.0916424 * 10^(-01)}, {57, 6.9927519 * 10^(-02)},
    {58, 4.5483324 * 10^(-02)}, {59, 2.4020261 * 10^(-02)}, {60, 1.3685723 * 10^(-02)},
    {61, 5.6531630 * 10^(-03)}, {62, 2.2910752 * 10^(-03)}, {63, 5.7881498 * 10^(-04)},
    {64, 1.2506524 * 10^(-04)}, {65, 2.4737920 * 10^(-05)}, {66, 4.7589411 * 10^(-06)},
    {67, 3.7643174 * 10^(-07)}, {68, 1.6196633 * 10^(-08)}, {69, 2.9087306 * 10^(-10)},
    {70, 9.4746638 * 10^(-13)}, {71, 1.2613780 * 10^(-16)}};

yieldData14MeV = {{23, 5.8359000 * 10^(-14)}, {24, 1.0252733 * 10^(-10)},
    {25, 1.5202417 * 10^(-08)}, {26, 4.0344128 * 10^(-07)}, {27, 3.0379953 * 10^(-06)},
    {28, 1.6151624 * 10^(-05)}, {29, 6.8119363 * 10^(-05)}, {30, 2.5691382 * 10^(-04)},
    {31, 1.0613122 * 10^(-03)}, {32, 3.8309307 * 10^(-03)}, {33, 1.0093773 * 10^(-02)},
    {34, 1.9475130 * 10^(-02)}, {35, 3.1365792 * 10^(-02)}, {36, 4.5896073 * 10^(-02)},
    {37, 6.3647838 * 10^(-02)}, {38, 8.5955944 * 10^(-02)}, {39, 1.0726475 * 10^(-01)},
    {40, 1.2093372 * 10^(-01)}, {41, 1.2614289 * 10^(-01)}, {42, 1.1733413 * 10^(-01)},
    {43, 9.4254783 * 10^(-02)}, {44, 6.8667238 * 10^(-02)}, {45, 4.4021257 * 10^(-02)},
    {46, 3.4078878 * 10^(-02)}, {47, 3.3962898 * 10^(-02)}, {48, 3.7470251 * 10^(-02)},
    {49, 5.0996742 * 10^(-02)}, {50, 7.5792955 * 10^(-02)}, {51, 9.4288338 * 10^(-02)},
    {52, 1.1550583 * 10^(-01)}, {53, 1.3909547 * 10^(-01)}, {54, 1.2319175 * 10^(-01)},
    {55, 1.0795971 * 10^(-01)}, {56, 8.2290344 * 10^(-02)}, {57, 6.1148817 * 10^(-02)},
    {58, 4.2076162 * 10^(-02)}, {59, 2.7862522 * 10^(-02)}, {60, 1.7269757 * 10^(-02)},
    {61, 9.4753252 * 10^(-03)}, {62, 4.6064041 * 10^(-03)}, {63, 1.8925698 * 10^(-03)},
    {64, 5.9594918 * 10^(-04)}, {65, 1.2545107 * 10^(-04)}, {66, 1.9337848 * 10^(-05)},
    {67, 3.3986278 * 10^(-06)}, {68, 7.5152685 * 10^(-07)}, {69, 1.0592245 * 10^(-07)},
    {70, 3.9222130 * 10^(-09)}, {71, 2.0911800 * 10^(-11)}};
```