

(*Nuclear Species Experimental Data*)

isotopeName = "U-235";

databaseName = "JENDL-5";

atomicNumber = 92; (*Atomic number*)

neutronNumber = 144; (*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 = 2.437; (*0.0253 eV*)

promptNeutrons2 = 2.879; (*500 keV*)

promptNeutrons3 = 4.378; (*14 MeV*)

(*Neutron Separation Energy*)

neutronSeparationEnergy = 6545.5 / 1000;

(*Charge Distribution Experimental Data JENDL-5*)

yieldData0253eV = { {23, 8.5766000 * 10⁻¹⁹}, {24, 3.9609291 * 10⁻¹⁴},
 {25, 1.5370404 * 10⁻¹¹}, {26, 1.2718744 * 10⁻⁰⁹},
 {27, 1.2582596 * 10⁻⁰⁸}, {28, 2.6884379 * 10⁻⁰⁷}, {29, 2.8139166 * 10⁻⁰⁶},
 {30, 1.0958335 * 10⁻⁰⁴}, {31, 5.2072732 * 10⁻⁰⁴}, {32, 4.5082664 * 10⁻⁰³},
 {33, 8.8743287 * 10⁻⁰³}, {34, 3.9228514 * 10⁻⁰²}, {35, 5.7334365 * 10⁻⁰²},
 {36, 1.5393238 * 10⁻⁰¹}, {37, 1.3474372 * 10⁻⁰¹}, {38, 1.8181283 * 10⁻⁰¹},
 {39, 1.2307820 * 10⁻⁰¹}, {40, 1.7618210 * 10⁻⁰¹}, {41, 6.7734377 * 10⁻⁰²},
 {42, 4.7654763 * 10⁻⁰²}, {43, 3.5170881 * 10⁻⁰³}, {44, 4.1602491 * 10⁻⁰⁴},
 {45, 2.3470808 * 10⁻⁰⁴}, {46, 3.0007882 * 10⁻⁰⁴}, {47, 3.5250657 * 10⁻⁰⁴},
 {48, 5.0831614 * 10⁻⁰⁴}, {49, 2.0004957 * 10⁻⁰³}, {50, 4.2320984 * 10⁻⁰²},
 {51, 8.2405384 * 10⁻⁰²}, {52, 1.5213206 * 10⁻⁰¹}, {53, 1.1464248 * 10⁻⁰¹},
 {54, 2.1162289 * 10⁻⁰¹}, {55, 1.1837770 * 10⁻⁰¹}, {56, 1.5451297 * 10⁻⁰¹},
 {57, 7.2933367 * 10⁻⁰²}, {58, 3.3121259 * 10⁻⁰²}, {59, 1.0037554 * 10⁻⁰²},
 {60, 4.2040329 * 10⁻⁰³}, {61, 5.3483053 * 10⁻⁰⁴}, {62, 1.0183160 * 10⁻⁰⁴},
 {63, 5.8695370 * 10⁻⁰⁶}, {64, 3.0787602 * 10⁻⁰⁷}, {65, 1.3980268 * 10⁻⁰⁸},
 {66, 1.8243994 * 10⁻⁰⁹}, {67, 9.0891695 * 10⁻¹¹}, {68, 4.0348752 * 10⁻¹²},
 {69, 1.8661035 * 10⁻¹⁴}, {70, 1.7743049 * 10⁻¹⁷}, {71, 0} };

yieldData500keV = { {23, 3.2077600 * 10⁻¹⁷}, {24, 7.5683074 * 10⁻¹³},
 {25, 2.0123593 * 10⁻¹⁰}, {26, 1.1350877 * 10⁻⁰⁸},
 {27, 9.3263778 * 10⁻⁰⁸}, {28, 1.7388168 * 10⁻⁰⁶}, {29, 2.4222736 * 10⁻⁰⁵},
 {30, 3.4827516 * 10⁻⁰⁴}, {31, 1.2578970 * 10⁻⁰³}, {32, 5.7605048 * 10⁻⁰³},
 {33, 1.2050307 * 10⁻⁰²}, {34, 3.9858838 * 10⁻⁰²}, {35, 6.5097751 * 10⁻⁰²},
 {36, 1.2995918 * 10⁻⁰¹}, {37, 1.3250486 * 10⁻⁰¹}, {38, 2.0284674 * 10⁻⁰¹},
 {39, 1.3150890 * 10⁻⁰¹}, {40, 1.6201899 * 10⁻⁰¹}, {41, 7.1796131 * 10⁻⁰²},
 {42, 4.0402421 * 10⁻⁰²}, {43, 2.3241592 * 10⁻⁰³}, {44, 1.0079449 * 10⁻⁰³},
 {45, 6.9268472 * 10⁻⁰⁴}, {46, 9.1297500 * 10⁻⁰⁴}, {47, 6.9869731 * 10⁻⁰⁴},
 {48, 1.1272403 * 10⁻⁰³}, {49, 4.4183666 * 10⁻⁰³}, {50, 5.1497674 * 10⁻⁰²},
 {51, 6.8590928 * 10⁻⁰²}, {52, 1.5453165 * 10⁻⁰¹}, {53, 1.3706414 * 10⁻⁰¹},

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{54, 1.7188943 * 10^(-01)}, {55, 1.3652907 * 10^(-01)}, {56, 1.5086941 * 10^(-01)},
{57, 7.2624384 * 10^(-02)}, {58, 3.6529878 * 10^(-02)}, {59, 9.0526842 * 10^(-03)},
{60, 3.5425749 * 10^(-03)}, {61, 5.1810018 * 10^(-04)}, {62, 1.2967924 * 10^(-04)},
{63, 1.0946699 * 10^(-05)}, {64, 5.4860036 * 10^(-07)}, {65, 1.9020937 * 10^(-08)},
{66, 1.9392045 * 10^(-09)}, {67, 1.3034477 * 10^(-10)}, {68, 3.5725247 * 10^(-12)},
{69, 8.3343000 * 10^(-15)}, {70, 2.1636800 * 10^(-18)}, {71, 0}};
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yieldData14MeV = {{23, 3.3391300 * 10^(-13)}, {24, 9.6058077 * 10^(-10)},
{25, 1.3773198 * 10^(-07)}, {26, 3.0157961 * 10^(-06)}, {27, 1.6930527 * 10^(-05)},
{28, 7.0419611 * 10^(-05)}, {29, 2.5311893 * 10^(-04)}, {30, 8.0627874 * 10^(-04)},
{31, 2.4728735 * 10^(-03)}, {32, 6.9742438 * 10^(-03)}, {33, 1.9781095 * 10^(-02)},
{34, 3.7855295 * 10^(-02)}, {35, 6.2882566 * 10^(-02)}, {36, 9.8012757 * 10^(-02)},
{37, 1.2035161 * 10^(-01)}, {38, 1.3027861 * 10^(-01)}, {39, 1.3035323 * 10^(-01)},
{40, 1.1691817 * 10^(-01)}, {41, 9.5656682 * 10^(-02)}, {42, 6.5191619 * 10^(-02)},
{43, 3.9035544 * 10^(-02)}, {44, 2.9249812 * 10^(-02)}, {45, 2.6062944 * 10^(-02)},
{46, 2.7346469 * 10^(-02)}, {47, 2.8920599 * 10^(-02)}, {48, 3.4029203 * 10^(-02)},
{49, 4.1212042 * 10^(-02)}, {50, 7.1619117 * 10^(-02)}, {51, 9.1805239 * 10^(-02)},
{52, 1.1671896 * 10^(-01)}, {53, 1.3073591 * 10^(-01)}, {54, 1.2821899 * 10^(-01)},
{55, 1.1856221 * 10^(-01)}, {56, 9.8728123 * 10^(-02)}, {57, 6.5797732 * 10^(-02)},
{58, 3.6317422 * 10^(-02)}, {59, 1.6507219 * 10^(-02)}, {60, 6.9152513 * 10^(-03)},
{61, 2.8408216 * 10^(-03)}, {62, 1.0564420 * 10^(-03)}, {63, 3.2650199 * 10^(-04)},
{64, 8.7299794 * 10^(-05)}, {65, 2.0929169 * 10^(-05)}, {66, 5.0668468 * 10^(-06)},
{67, 1.1936741 * 10^(-06)}, {68, 2.3421859 * 10^(-07)}, {69, 1.6309175 * 10^(-08)},
{70, 2.1292989 * 10^(-10)}, {71, 3.0924600 * 10^(-13)}}};
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