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(*Nuclear Species Experimental Data*)
isotopeName = "U-238";
databaseName = "JENDL-5";

atomicNumber = 92; (*Atomic number*)
neutronNumber = 147; (*Compound nucleus neutron number*)

energyPattern = 5; (*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*) (*energyPattern=5;
Data at 500keV,14MeV*)

(*Incident Neutron Kinetic Energy*)
neutronEnergy2 = 0.5; (*500 keV*)
neutronEnergy3 = 14; (*14 MeV*)
(*Average Number of Prompt Neutrons*)
promptNeutrons2 = 2.579; (*500 keV*)
promptNeutrons3 = 4.458; (*14 MeV*)

(*Neutron Separation Energy*)
neutronSeparationEnergy = 4806.3 / 1000;

(*Charge Distribution Experimental Data JENDL-5*)
yieldData500keV =
  {{23, 8.0546000 * 10^(-15)}, {24, 3.5895072 * 10^(-11)}, {25, 6.5466712 * 10^(-09)},
  {26, 1.6234693 * 10^(-07)}, {27, 6.1041301 * 10^(-07)}, {28, 1.8563953 * 10^(-06)},
  {29, 8.1211560 * 10^(-06)}, {30, 1.0477176 * 10^(-04)}, {31, 7.2120567 * 10^(-04)},
  {32, 4.8171057 * 10^(-03)}, {33, 1.4089208 * 10^(-02)}, {34, 2.9902939 * 10^(-02)},
  {35, 6.0636309 * 10^(-02)}, {36, 9.6479731 * 10^(-02)}, {37, 1.1276355 * 10^(-01)},
  {38, 1.6995136 * 10^(-01)}, {39, 1.2372369 * 10^(-01)}, {40, 2.1292178 * 10^(-01)},
  {41, 9.0389061 * 10^(-02)}, {42, 7.2698593 * 10^(-02)}, {43, 8.1398077 * 10^(-03)},
  {44, 1.0361767 * 10^(-03)}, {45, 8.7548716 * 10^(-04)}, {46, 1.0124857 * 10^(-03)},
  {47, 8.7966243 * 10^(-04)}, {48, 1.1152671 * 10^(-03)}, {49, 5.2276509 * 10^(-03)},
  {50, 5.1884872 * 10^(-02)}, {51, 1.1676863 * 10^(-01)}, {52, 1.7070741 * 10^(-01)},
  {53, 1.6989076 * 10^(-01)}, {54, 1.3199846 * 10^(-01)}, {55, 1.1105448 * 10^(-01)},
  {56, 1.0768902 * 10^(-01)}, {57, 7.4008031 * 10^(-02)}, {58, 4.0220424 * 10^(-02)},
  {59, 1.2714910 * 10^(-02)}, {60, 4.4839050 * 10^(-03)}, {61, 9.0186017 * 10^(-04)},
  {62, 1.6443979 * 10^(-04)}, {63, 1.3033120 * 10^(-05)}, {64, 2.2149734 * 10^(-06)},
  {65, 6.6984321 * 10^(-07)}, {66, 2.4746632 * 10^(-07)}, {67, 4.5711475 * 10^(-08)},
  {68, 1.7568430 * 10^(-09)}, {69, 3.1071222 * 10^(-12)}, {70, 0}, {71, 0}};

yieldData14MeV = {{23, 2.3900700 * 10^(-14)}, {24, 1.3726537 * 10^(-10)},
  {25, 2.9247087 * 10^(-08)}, {26, 8.3428518 * 10^(-07)},
  {27, 6.1024254 * 10^(-06)}, {28, 3.2919733 * 10^(-05)}, {29, 1.4086956 * 10^(-04)},
  {30, 5.4246134 * 10^(-04)}, {31, 2.2750910 * 10^(-03)}, {32, 7.2560669 * 10^(-03)},
  {33, 1.8126271 * 10^(-02)}, {34, 3.3486472 * 10^(-02)}, {35, 5.5988236 * 10^(-02)},
  {36, 8.6642946 * 10^(-02)}, {37, 1.1270510 * 10^(-01)}, {38, 1.3069283 * 10^(-01)},
  {39, 1.3932716 * 10^(-01)}, {40, 1.3723355 * 10^(-01)}, {41, 1.1251643 * 10^(-01)},
  {42, 7.0118888 * 10^(-02)}, {43, 3.6316807 * 10^(-02)}, {44, 2.5864813 * 10^(-02)},

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{45, 2.1150828 * 10^(-02)}, {46, 1.9957877 * 10^(-02)}, {47, 2.2343348 * 10^(-02)},
{48, 2.5436310 * 10^(-02)}, {49, 3.8772648 * 10^(-02)}, {50, 6.9563087 * 10^(-02)},
{51, 1.0911729 * 10^(-01)}, {52, 1.3850361 * 10^(-01)}, {53, 1.4163540 * 10^(-01)},
{54, 1.1732256 * 10^(-01)}, {55, 1.1858486 * 10^(-01)}, {56, 8.8844686 * 10^(-02)},
{57, 5.6765733 * 10^(-02)}, {58, 3.3992696 * 10^(-02)}, {59, 1.7877820 * 10^(-02)},
{60, 7.2955056 * 10^(-03)}, {61, 2.5551956 * 10^(-03)}, {62, 7.5260618 * 10^(-04)},
{63, 1.9269712 * 10^(-04)}, {64, 4.7890286 * 10^(-05)}, {65, 1.0940465 * 10^(-05)},
{66, 2.2479184 * 10^(-06)}, {67, 3.4155819 * 10^(-07)}, {68, 1.8509764 * 10^(-08)},
{69, 1.4753700 * 10^(-10)}, {70, 1.1231173 * 10^(-13)}, {71, 0}];

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