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(*Am-241*)
isotopeName = "Am-241";
databaseName = "JENDL-5";

atomicNumber = 95; (*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 = 3.209; (*0.0253 eV*)
promptNeutrons2 = 3.453; (*500 keV 2*)
promptNeutrons3 = 4.972; (*14 MeV 4*)

(*Neutron Separation Energy*)
neutronSeparationEnergy = 6545.5 / 1000;

(*Charge Distribution Experimental Data JENDL-5*)
yieldData0253eV =
  {{23, 0}, {24, 3.675815000000 * 10^(-15)}, {25, 4.488553000000 * 10^(-12)},
   {26, 4.081464600000 * 10^(-10)}, {27, 6.321224500000 * 10^(-09)},
   {28, 5.813700300000 * 10^(-08)}, {29, 5.396068000000 * 10^(-07)},
   {30, 7.891650600000 * 10^(-06)}, {31, 9.080356800000 * 10^(-05)},
   {32, 4.962374900000 * 10^(-04)}, {33, 2.458805900000 * 10^(-03)},
   {34, 7.395102100000 * 10^(-03)}, {35, 1.567000600000 * 10^(-02)},
   {36, 2.917890500000 * 10^(-02)}, {37, 5.018802000000 * 10^(-02)},
   {38, 8.080385400000 * 10^(-02)}, {39, 1.171875200000 * 10^(-01)},
   {40, 1.473843700000 * 10^(-01)}, {41, 1.556635300000 * 10^(-01)},
   {42, 1.586219700000 * 10^(-01)}, {43, 1.326595700000 * 10^(-01)},
   {44, 7.209529600000 * 10^(-02)}, {45, 2.721916000000 * 10^(-02)},
   {46, 1.945622200000 * 10^(-03)}, {47, 5.571093200000 * 10^(-04)},
   {48, 5.638052600000 * 10^(-04)}, {49, 3.313644000000 * 10^(-03)},
   {50, 3.481391700000 * 10^(-02)}, {51, 7.270859400000 * 10^(-02)},
   {52, 1.263897600000 * 10^(-01)}, {53, 1.583465500000 * 10^(-01)},
   {54, 1.749424200000 * 10^(-01)}, {55, 1.417760800000 * 10^(-01)},
   {56, 1.074946700000 * 10^(-01)}, {57, 7.668888600000 * 10^(-02)},
   {58, 4.851934700000 * 10^(-02)}, {59, 2.871981200000 * 10^(-02)},
   {60, 1.517342400000 * 10^(-02)}, {61, 6.988924600000 * 10^(-03)},
   {62, 2.804647000000 * 10^(-03)}, {63, 9.247789400000 * 10^(-04)},
   {64, 1.901645000000 * 10^(-04)}, {65, 1.590534400000 * 10^(-05)},
   {66, 7.722287300000 * 10^(-07)}, {67, 6.769845800000 * 10^(-08)},
   {68, 3.719226200000 * 10^(-09)}, {69, 6.171167700000 * 10^(-11)},
   {70, 1.550346500000 * 10^(-13)}, {71, 6.267620000000 * 10^(-17)}}};

yieldData500keV = {{23, 6.946760000000 * 10^(-19)},
  {24, 1.834440400000 * 10^(-14)}, {25, 2.460227800000 * 10^(-11)},

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{26, 2.528813100000 * 10^(-09)}, {27, 4.200898500000 * 10^(-08)},
{28, 3.549482900000 * 10^(-07)}, {29, 3.547372500000 * 10^(-06)},
{30, 3.038959200000 * 10^(-05)}, {31, 2.349547400000 * 10^(-04)},
{32, 1.102012600000 * 10^(-03)}, {33, 3.834712700000 * 10^(-03)},
{34, 9.782982100000 * 10^(-03)}, {35, 2.032781600000 * 10^(-02)},
{36, 3.507650500000 * 10^(-02)}, {37, 5.739937800000 * 10^(-02)},
{38, 8.351386600000 * 10^(-02)}, {39, 1.128813700000 * 10^(-01)},
{40, 1.411021700000 * 10^(-01)}, {41, 1.568796100000 * 10^(-01)},
{42, 1.494090000000 * 10^(-01)}, {43, 1.198071500000 * 10^(-01)},
{44, 6.961135900000 * 10^(-02)}, {45, 3.156931100000 * 10^(-02)},
{46, 4.072561100000 * 10^(-03)}, {47, 1.734958400000 * 10^(-03)},
{48, 1.759574400000 * 10^(-03)}, {49, 3.701810400000 * 10^(-03)},
{50, 3.016402100000 * 10^(-02)}, {51, 6.887183700000 * 10^(-02)},
{52, 1.312029000000 * 10^(-01)}, {53, 1.456747400000 * 10^(-01)},
{54, 1.561370300000 * 10^(-01)}, {55, 1.431329800000 * 10^(-01)},
{56, 1.136638400000 * 10^(-01)}, {57, 8.393280200000 * 10^(-02)},
{58, 5.567900800000 * 10^(-02)}, {59, 3.344336600000 * 10^(-02)},
{60, 1.880856900000 * 10^(-02)}, {61, 9.597700000000 * 10^(-03)},
{62, 3.940113800000 * 10^(-03)}, {63, 1.503410400000 * 10^(-03)},
{64, 3.666937600000 * 10^(-04)}, {65, 4.282209200000 * 10^(-05)},
{66, 3.236272100000 * 10^(-06)}, {67, 3.278772500000 * 10^(-07)},
{68, 3.833803100000 * 10^(-08)}, {69, 1.511289400000 * 10^(-09)},
{70, 6.539669900000 * 10^(-12)}, {71, 3.545740000000 * 10^(-15)}];
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yieldData14MeV = {{23, 1.547030000000 * 10^(-13)},
{24, 2.676537700000 * 10^(-10)}, {25, 5.495249300000 * 10^(-08)},
{26, 1.807109000000 * 10^(-06)}, {27, 1.393543800000 * 10^(-05)},
{28, 6.184743500000 * 10^(-05)}, {29, 2.140598400000 * 10^(-04)},
{30, 5.967192700000 * 10^(-04)}, {31, 1.524710700000 * 10^(-03)},
{32, 3.736250900000 * 10^(-03)}, {33, 8.420609000000 * 10^(-03)},
{34, 1.535350500000 * 10^(-02)}, {35, 2.442769100000 * 10^(-02)},
{36, 3.539749300000 * 10^(-02)}, {37, 4.904847100000 * 10^(-02)},
{38, 6.323370000000 * 10^(-02)}, {39, 8.112650800000 * 10^(-02)},
{40, 1.015271800000 * 10^(-01)}, {41, 1.177209200000 * 10^(-01)},
{42, 1.213364000000 * 10^(-01)}, {43, 1.095741300000 * 10^(-01)},
{44, 9.798150600000 * 10^(-02)}, {45, 8.742407200000 * 10^(-02)},
{46, 4.793578000000 * 10^(-02)}, {47, 2.643196300000 * 10^(-02)},
{48, 2.900268400000 * 10^(-02)}, {49, 6.106390200000 * 10^(-02)},
{50, 8.975632200000 * 10^(-02)}, {51, 1.042513600000 * 10^(-01)},
{52, 9.793360200000 * 10^(-02)}, {53, 1.169071300000 * 10^(-01)},
{54, 1.244258800000 * 10^(-01)}, {55, 1.082377500000 * 10^(-01)},
{56, 8.036932100000 * 10^(-02)}, {57, 6.190437100000 * 10^(-02)},
{58, 4.725144500000 * 10^(-02)}, {59, 3.444891900000 * 10^(-02)},
{60, 2.336111900000 * 10^(-02)}, {61, 1.437209000000 * 10^(-02)},
{62, 7.356261500000 * 10^(-03)}, {63, 3.699951900000 * 10^(-03)},
{64, 1.706876300000 * 10^(-03)}, {65, 5.787499800000 * 10^(-04)},
{66, 2.014623200000 * 10^(-04)}, {67, 6.176046700000 * 10^(-05)},
{68, 1.852469500000 * 10^(-05)}, {69, 2.862408900000 * 10^(-06)},
{70, 1.134697400000 * 10^(-07)}, {71, 6.385320000000 * 10^(-10)}];
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