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(*1*)
(*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)}}};

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)},

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{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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optResult0253eVRe1 = {1.2289142557710468`*^-12,
  effectiveDistance0253eV[23, 72] -> 0.24753348814594248`,
  effectiveDistance0253eV[24, 71] -> 0.5908264554516157,
  effectiveDistance0253eV[25, 70] -> 0.7681005307868911,
  effectiveDistance0253eV[26, 69] -> 0.8187387374614866,
  effectiveDistance0253eV[27, 68] -> 0.8681877367017214,
  effectiveDistance0253eV[28, 67] -> 0.9305084135420589,
  effectiveDistance0253eV[29, 66] -> 0.9587257732820521,
  effectiveDistance0253eV[30, 65] -> 0.9853515174419165,
  effectiveDistance0253eV[31, 64] -> 1.0109306697515896`,
  effectiveDistance0253eV[32, 63] -> 1.0344965317052044`,
  effectiveDistance0253eV[33, 62] -> 1.0571573242734273`,
  effectiveDistance0253eV[34, 61] -> 1.0780419829828836`,
  effectiveDistance0253eV[35, 60] -> 1.0980112014343257`,
  effectiveDistance0253eV[36, 59] -> 1.1162920269610594`,
  effectiveDistance0253eV[37, 58] -> 1.1331730106182785`,
  effectiveDistance0253eV[38, 57] -> 1.147909609532276,
  effectiveDistance0253eV[39, 56] -> 1.161334907833977,
  effectiveDistance0253eV[40, 55] -> 1.172647161511776,
  effectiveDistance0253eV[41, 54] -> 1.1825244656222005`,
  effectiveDistance0253eV[42, 53] -> 1.1911048876400734`,
  effectiveDistance0253eV[43, 52] -> 1.1985697355029996`,
  effectiveDistance0253eV[44, 51] -> 1.2042404338516066`,
  effectiveDistance0253eV[45, 50] -> 1.208587502258462,
  effectiveDistance0253eV[46, 49] -> 1.211327590195687,
  effectiveDistance0253eV[47, 48] -> 1.2128129257522797`,
  effectiveDistance0253eV[48, 47] -> 1.2128185614706406`,
  effectiveDistance0253eV[49, 46] -> 1.2115785295693855`,
  effectiveDistance0253eV[50, 45] -> 1.208703252727839,
  effectiveDistance0253eV[51, 44] -> 1.2042444049576175`,
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effectiveDistance0253eV[52, 43] -> 1.1985471311854505`,
effectiveDistance0253eV[53, 42] -> 1.1911040809339741`,
effectiveDistance0253eV[54, 41] -> 1.1825783250696074`,
effectiveDistance0253eV[55, 40] -> 1.1726293965581815`,
effectiveDistance0253eV[56, 39] -> 1.1612957067757008`,
effectiveDistance0253eV[57, 38] -> 1.1478861322621994`,
effectiveDistance0253eV[58, 37] -> 1.1331580023982588`,
effectiveDistance0253eV[59, 36] -> 1.1162850897316903`,
effectiveDistance0253eV[60, 35] -> 1.0979973380581964`,
effectiveDistance0253eV[61, 34] -> 1.078018098077868,
effectiveDistance0253eV[62, 33] -> 1.057211937688498,
effectiveDistance0253eV[63, 32] -> 1.0347494976009233`,
effectiveDistance0253eV[64, 31] -> 1.0112245072034085`,
effectiveDistance0253eV[65, 30] -> 0.9856231421164414,
effectiveDistance0253eV[66, 29] -> 0.9588609954130308,
effectiveDistance0253eV[67, 28] -> 0.9305641706573622,
effectiveDistance0253eV[68, 27] -> 0.8681877366854901,
effectiveDistance0253eV[69, 26] -> 0.8187387374632618,
effectiveDistance0253eV[70, 25] -> 0.7681005307888061,
effectiveDistance0253eV[71, 24] -> 0.5908264554549708,
effectiveDistance0253eV[72, 23] -> 0.24753348815138038`}};

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optResult500keVre1 =

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{2.7721980057424424`*^-12, {effectiveDistance500keV[23, 72] -> 0.2914699057854869,
effectiveDistance500keV[24, 71] -> 0.6145035426500048,
effectiveDistance500keV[25, 70] -> 0.7791562628264788,
effectiveDistance500keV[26, 69] -> 0.824489236302463,
effectiveDistance500keV[27, 68] -> 0.8801747291732622,
effectiveDistance500keV[28, 67] -> 0.9207196801542338,
effectiveDistance500keV[29, 66] -> 0.9494780247716045,
effectiveDistance500keV[30, 65] -> 0.9764377177087967,
effectiveDistance500keV[31, 64] -> 1.0023851770504508`,
effectiveDistance500keV[32, 63] -> 1.0264161309213098`,
effectiveDistance500keV[33, 62] -> 1.049435602650238,
effectiveDistance500keV[34, 61] -> 1.070731554744755,
effectiveDistance500keV[35, 60] -> 1.0911337033105843`,
effectiveDistance500keV[36, 59] -> 1.109803767639028,
effectiveDistance500keV[37, 58] -> 1.1270680365421808`,
effectiveDistance500keV[38, 57] -> 1.1421446768424446`,
effectiveDistance500keV[39, 56] -> 1.1558802949471212`,
effectiveDistance500keV[40, 55] -> 1.1675281004624496`,
effectiveDistance500keV[41, 54] -> 1.1777263793872716`,
effectiveDistance500keV[42, 53] -> 1.1865158164313618`,
effectiveDistance500keV[43, 52] -> 1.1941437643927257`,
effectiveDistance500keV[44, 51] -> 1.19997980149141,
effectiveDistance500keV[45, 50] -> 1.2045009736986259`,
effectiveDistance500keV[46, 49] -> 1.2075279942659725`,
effectiveDistance500keV[47, 48] -> 1.2092104663981948`,
effectiveDistance500keV[48, 47] -> 1.209217577326714,
effectiveDistance500keV[49, 46] -> 1.207479889783404,
effectiveDistance500keV[50, 45] -> 1.2044780783866185`,
effectiveDistance500keV[51, 44] -> 1.1999744501487166`,
effectiveDistance500keV[52, 43] -> 1.1941890922653815`,
effectiveDistance500keV[53, 42] -> 1.1865032668271864`,
effectiveDistance500keV[54, 41] -> 1.177724042751708,

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effectiveDistance500keV[55, 40] -> 1.1675350827062216`,
effectiveDistance500keV[56, 39] -> 1.1558836396339174`,
effectiveDistance500keV[57, 38] -> 1.142147071924998,
effectiveDistance500keV[58, 37] -> 1.1270536545549903`,
effectiveDistance500keV[59, 36] -> 1.1097815788386922`,
effectiveDistance500keV[60, 35] -> 1.0910981588555777`,
effectiveDistance500keV[61, 34] -> 1.0707229702393084`,
effectiveDistance500keV[62, 33] -> 1.049447537918523,
effectiveDistance500keV[63, 32] -> 1.0265498610994526`,
effectiveDistance500keV[64, 31] -> 1.0025724141371153`,
effectiveDistance500keV[65, 30] -> 0.9765781925460106,
effectiveDistance500keV[66, 29] -> 0.9494414757709072,
effectiveDistance500keV[67, 28] -> 0.9206890670689176,
effectiveDistance500keV[68, 27] -> 0.8801747291738311,
effectiveDistance500keV[69, 26] -> 0.8244892363022523,
effectiveDistance500keV[70, 25] -> 0.779156262826193,
effectiveDistance500keV[71, 24] -> 0.6145035426509217,
effectiveDistance500keV[72, 23] -> 0.2914699057864812}};

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optResult14MeVRe1 = {7.2211366060773815`*^-9,
{effectiveDistance14MeV[23, 72] -> 0.0052350279916215945`,
effectiveDistance14MeV[24, 71] -> 0.33522766821994693`,
effectiveDistance14MeV[25, 70] -> 0.6863480872136815,
effectiveDistance14MeV[26, 69] -> 0.851829834662928,
effectiveDistance14MeV[27, 68] -> 0.9158903050439581,
effectiveDistance14MeV[28, 67] -> 0.9607177057767678,
effectiveDistance14MeV[29, 66] -> 0.9897734432703256,
effectiveDistance14MeV[30, 65] -> 1.0169122796534895`,
effectiveDistance14MeV[31, 64] -> 1.0428747629849269`,
effectiveDistance14MeV[32, 63] -> 1.0671130240244127`,
effectiveDistance14MeV[33, 62] -> 1.0903223686035262`,
effectiveDistance14MeV[34, 61] -> 1.1115640031040233`,
effectiveDistance14MeV[35, 60] -> 1.13159093188227,
effectiveDistance14MeV[36, 59] -> 1.149822279806838,
effectiveDistance14MeV[37, 58] -> 1.1666407051525425`,
effectiveDistance14MeV[38, 57] -> 1.1814569930276282`,
effectiveDistance14MeV[39, 56] -> 1.1950499761978728`,
effectiveDistance14MeV[40, 55] -> 1.2069374943181468`,
effectiveDistance14MeV[41, 54] -> 1.2175251873143302`,
effectiveDistance14MeV[42, 53] -> 1.2262878388614278`,
effectiveDistance14MeV[43, 52] -> 1.2337070595709179`,
effectiveDistance14MeV[44, 51] -> 1.2393734362580986`,
effectiveDistance14MeV[45, 50] -> 1.243873718248574,
effectiveDistance14MeV[46, 49] -> 1.2468531538231509`,
effectiveDistance14MeV[47, 48] -> 1.247934093290273,
effectiveDistance14MeV[48, 47] -> 1.2480796093649726`,
effectiveDistance14MeV[49, 46] -> 1.2472325782783398`,
effectiveDistance14MeV[50, 45] -> 1.2439148884966382`,
effectiveDistance14MeV[51, 44] -> 1.239470120511083,
effectiveDistance14MeV[52, 43] -> 1.2335326956212953`,
effectiveDistance14MeV[53, 42] -> 1.226230407869093,
effectiveDistance14MeV[54, 41] -> 1.2176102143316934`,
effectiveDistance14MeV[55, 40] -> 1.2070349601900874`,
effectiveDistance14MeV[56, 39] -> 1.1950358235353806`,
effectiveDistance14MeV[57, 38] -> 1.1814252608896352`,

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effectiveDistance14MeV[58, 37] -> 1.1665855875605575`,
effectiveDistance14MeV[59, 36] -> 1.1497827094848214`,
effectiveDistance14MeV[60, 35] -> 1.1315268608767375`,
effectiveDistance14MeV[61, 34] -> 1.1114708068004606`,
effectiveDistance14MeV[62, 33] -> 1.0901351718882646`,
effectiveDistance14MeV[63, 32] -> 1.067099776801915,
effectiveDistance14MeV[64, 31] -> 1.0430246015025646`,
effectiveDistance14MeV[65, 30] -> 1.0168726746877566`,
effectiveDistance14MeV[66, 29] -> 0.9896969105644794,
effectiveDistance14MeV[67, 28] -> 0.9607159817149119,
effectiveDistance14MeV[68, 27] -> 0.9158903050440366,
effectiveDistance14MeV[69, 26] -> 0.8518298346631484,
effectiveDistance14MeV[70, 25] -> 0.6863480872141302,
effectiveDistance14MeV[71, 24] -> 0.3352276682209233,
effectiveDistance14MeV[72, 23] -> 0.005235027993907469}};

optResult0253eVRe2 = {1.2322645035581976`*^-12,
{fermiEnergy0253eV[23, 72] -> 1., fermiEnergy0253eV[24, 71] -> 1.,
fermiEnergy0253eV[25, 70] -> 1.0000000000000044`,
fermiEnergy0253eV[26, 69] -> 1.0000000000065945`,
fermiEnergy0253eV[27, 68] -> 1.0000000009621768`, fermiEnergy0253eV[28, 67] ->
0.46088190753782704`, fermiEnergy0253eV[29, 66] -> 0.21585130149395104`,
fermiEnergy0253eV[30, 65] -> -0.30801023456273224`,
fermiEnergy0253eV[31, 64] -> 0.4396991192548054,
fermiEnergy0253eV[32, 63] -> -0.28040557427821133`,
fermiEnergy0253eV[33, 62] -> 0.5795597444368815,
fermiEnergy0253eV[34, 61] -> 0.6573514754299288,
fermiEnergy0253eV[35, 60] -> 2.171716534575863,
fermiEnergy0253eV[36, 59] -> 3.1332949028526715`,
fermiEnergy0253eV[37, 58] -> 4.2762896490978815`,
fermiEnergy0253eV[38, 57] -> 3.834640560658275,
fermiEnergy0253eV[39, 56] -> 3.827251291220233,
fermiEnergy0253eV[40, 55] -> 2.389202610456633,
fermiEnergy0253eV[41, 54] -> 1.1115023720364334`,
fermiEnergy0253eV[42, 53] -> 0.29506554979290406`,
fermiEnergy0253eV[43, 52] -> 0.33007339359873067`,
fermiEnergy0253eV[44, 51] -> -0.3147139926836285,
fermiEnergy0253eV[45, 50] -> -0.5863667776941978,
fermiEnergy0253eV[46, 49] -> -1.1178459258540792`,
fermiEnergy0253eV[47, 48] -> -1.131358401666873,
fermiEnergy0253eV[48, 47] -> -1.126113165169565,
fermiEnergy0253eV[49, 46] -> -0.5845116090914384,
fermiEnergy0253eV[50, 45] -> -0.3658191448394434,
fermiEnergy0253eV[51, 44] -> -0.35675564993372194`,
fermiEnergy0253eV[52, 43] -> 0.21356194629104533`,
fermiEnergy0253eV[53, 42] -> 0.21211896701338256`,
fermiEnergy0253eV[54, 41] -> 1.1374883728117338`,
fermiEnergy0253eV[55, 40] -> 2.235300808702611,
fermiEnergy0253eV[56, 39] -> 3.606107163790658,
fermiEnergy0253eV[57, 38] -> 3.63188864592049,
fermiEnergy0253eV[58, 37] -> 4.07473127565936,
fermiEnergy0253eV[59, 36] -> 2.9316223330256075`,
fermiEnergy0253eV[60, 35] -> 1.9319946635236762`,
fermiEnergy0253eV[61, 34] -> 0.3694442364579304,
fermiEnergy0253eV[62, 33] -> 0.47394591259860713`,

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fermiEnergy0253eV[63, 32] -> 0.13128241769098722`,
fermiEnergy0253eV[64, 31] -> 0.9597608415852792,
fermiEnergy0253eV[65, 30] -> 0.14710729014926302`,
fermiEnergy0253eV[66, 29] -> 0.2591828156605079,
fermiEnergy0253eV[67, 28] -> 0.2376593562476624,
fermiEnergy0253eV[68, 27] -> 1.0000000014036547`,
fermiEnergy0253eV[69, 26] -> 1.000000000099427`,
fermiEnergy0253eV[70, 25] -> 1.000000000000062`,
fermiEnergy0253eV[71, 24] -> 1., fermiEnergy0253eV[72, 23] -> 1.}}};

optResult500keVre2 = {2.7800862117976667`*^-12,
{fermiEnergy500keV[23, 72] -> 1., fermiEnergy500keV[24, 71] -> 1.,
fermiEnergy500keV[25, 70] -> 1.000000000000002, fermiEnergy500keV[26, 69] ->
1.000000000059535`, fermiEnergy500keV[27, 68] -> 1.000000001379749,
fermiEnergy500keV[28, 67] -> 1.7173952064810722`,
fermiEnergy500keV[29, 66] -> 1.2160336650080317`,
fermiEnergy500keV[30, 65] -> -0.06250882374122628,
fermiEnergy500keV[31, 64] -> 0.19512179389169843`,
fermiEnergy500keV[32, 63] -> -0.6533053764522713,
fermiEnergy500keV[33, 62] -> -0.08954229937200682,
fermiEnergy500keV[34, 61] -> -0.08438357445931044,
fermiEnergy500keV[35, 60] -> 1.51418377314882,
fermiEnergy500keV[36, 59] -> 2.5176082949047753`,
fermiEnergy500keV[37, 58] -> 3.7640666298119703`,
fermiEnergy500keV[38, 57] -> 3.377224661914707,
fermiEnergy500keV[39, 56] -> 3.4322559745028216`,
fermiEnergy500keV[40, 55] -> 2.174720471013471,
fermiEnergy500keV[41, 54] -> 1.1156244037547887`,
fermiEnergy500keV[42, 53] -> 0.3358703749146128,
fermiEnergy500keV[43, 52] -> 0.38241876038272044`,
fermiEnergy500keV[44, 51] -> -0.17889290612242076`,
fermiEnergy500keV[45, 50] -> -0.27385807330405915`,
fermiEnergy500keV[46, 49] -> -0.3087129705907617,
fermiEnergy500keV[47, 48] -> 0.04821622837552689,
fermiEnergy500keV[48, 47] -> 0.06166854949758037,
fermiEnergy500keV[49, 46] -> -0.4228476767971121,
fermiEnergy500keV[50, 45] -> -0.3367787563341009,
fermiEnergy500keV[51, 44] -> -0.20748853378290505`,
fermiEnergy500keV[52, 43] -> 0.46329762313862194`,
fermiEnergy500keV[53, 42] -> 0.2808401631263976,
fermiEnergy500keV[54, 41] -> 1.0786719971892798`,
fermiEnergy500keV[55, 40] -> 2.15407386922837,
fermiEnergy500keV[56, 39] -> 3.3977635356656446`,
fermiEnergy500keV[57, 38] -> 3.334858070001075,
fermiEnergy500keV[58, 37] -> 3.6749810352453456`,
fermiEnergy500keV[59, 36] -> 2.4020806749423387`,
fermiEnergy500keV[60, 35] -> 1.356769820249369,
fermiEnergy500keV[61, 34] -> -0.1810178028614838,
fermiEnergy500keV[62, 33] -> -0.13953513633804,
fermiEnergy500keV[63, 32] -> -0.3750200996518856,
fermiEnergy500keV[64, 31] -> 0.628307529782652,
fermiEnergy500keV[65, 30] -> 0.24230238726086245`,
fermiEnergy500keV[66, 29] -> 0.9847341148737347,
fermiEnergy500keV[67, 28] -> 1.4884422745931079`,
fermiEnergy500keV[68, 27] -> 1.0000000015499457`,

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fermiEnergy500keV[69, 26] -> 1.0000000000067581`,
fermiEnergy500keV[70, 25] -> 1.0000000000000024`,
fermiEnergy500keV[71, 24] -> 1., fermiEnergy500keV[72, 23] -> 1.}};
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optResult14MeVRe2 =
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{1.777508412072263`*^-10, {fermiEnergy14MeV[23, 72] -> 1.0000000001508513`,
fermiEnergy14MeV[24, 71] -> 1.0000000052584062`,
fermiEnergy14MeV[25, 70] -> 1.00000000756364489`,
fermiEnergy14MeV[26, 69] -> 1.00000009333802529`, fermiEnergy14MeV[27, 68] ->
1.000005512920862, fermiEnergy14MeV[28, 67] -> -0.5462824985515259,
fermiEnergy14MeV[29, 66] -> 0.28526252343070724`, fermiEnergy14MeV[30, 65] ->
-0.036442666413233106`, fermiEnergy14MeV[31, 64] -> 0.5503683243780053,
fermiEnergy14MeV[32, 63] -> 0.5666134811732026, fermiEnergy14MeV[33, 62] ->
1.7858570342976454`, fermiEnergy14MeV[34, 61] -> 1.8489469868336816`,
fermiEnergy14MeV[35, 60] -> 2.6194304832173585`,
fermiEnergy14MeV[36, 59] -> 2.710237919141642,
fermiEnergy14MeV[37, 58] -> 3.0317819544659432`,
fermiEnergy14MeV[38, 57] -> 2.2570657910439724`,
fermiEnergy14MeV[39, 56] -> 2.149972308726424,
fermiEnergy14MeV[40, 55] -> 1.6331961773242547`,
fermiEnergy14MeV[41, 54] -> 1.5921350949866149`,
fermiEnergy14MeV[42, 53] -> 0.8919223668930227,
fermiEnergy14MeV[43, 52] -> 0.5660081024751907,
fermiEnergy14MeV[44, 51] -> -0.2565397031187537,
fermiEnergy14MeV[45, 50] -> -0.3419762775550775,
fermiEnergy14MeV[46, 49] -> -0.4411775456793265,
fermiEnergy14MeV[47, 48] -> -1.3420469414101905`,
fermiEnergy14MeV[48, 47] -> -1.036644323392237,
fermiEnergy14MeV[49, 46] -> 0.35640996212515624`,
fermiEnergy14MeV[50, 45] -> -0.24627232275661617`,
fermiEnergy14MeV[51, 44] -> -0.039811569082500185`,
fermiEnergy14MeV[52, 43] -> 0.2143748728660097,
fermiEnergy14MeV[53, 42] -> 0.7907822527449723,
fermiEnergy14MeV[54, 41] -> 1.8003790328927702`,
fermiEnergy14MeV[55, 40] -> 1.8747682095059885`,
fermiEnergy14MeV[56, 39] -> 2.152817988597373,
fermiEnergy14MeV[57, 38] -> 2.224733551652233,
fermiEnergy14MeV[58, 37] -> 2.9499804815945447`,
fermiEnergy14MeV[59, 36] -> 2.6670533226377837`,
fermiEnergy14MeV[60, 35] -> 2.521770080922062,
fermiEnergy14MeV[61, 34] -> 1.6829376853958067`,
fermiEnergy14MeV[62, 33] -> 1.3871205001447933`,
fermiEnergy14MeV[63, 32] -> 0.6045551172071535,
fermiEnergy14MeV[64, 31] -> 1.0225799378111222`,
fermiEnergy14MeV[65, 30] -> -0.057787190595020445`,
fermiEnergy14MeV[66, 29] -> 0.16436797124940244`,
fermiEnergy14MeV[67, 28] -> -0.44783048272064513`,
fermiEnergy14MeV[68, 27] -> 1.000005342941177,
fermiEnergy14MeV[69, 26] -> 1.00000009021691179`,
fermiEnergy14MeV[70, 25] -> 1.0000000728903717`,
fermiEnergy14MeV[71, 24] -> 1.0000000050507583`,
fermiEnergy14MeV[72, 23] -> 1.000000000144357}}};
```