

TABLE 2. IRDFF-II thermal-neutron-induced fission yields (neutron energy $E_n = 0.0253$ eV).

Target	Fission Product	Cumulative Fission Yield
^{235}U	^{95}Zr	$6.5042\text{E-}02 \pm 1.00$ %
	^{99}Mo	$6.1399\text{E-}02 \pm 1.30$ %
	^{103}Ru	$3.1118\text{E-}02 \pm 2.10$ %
	^{106}Ru	$4.0958\text{E-}03 \pm 2.30$ %
	^{137}Cs	$6.0897\text{E-}02 \pm 1.04$ %
	^{140}Ba	$6.3444\text{E-}02 \pm 1.00$ %
	^{144}Ce	$5.4781\text{E-}02 \pm 0.90$ %
^{237}Np	^{95}Zr	$5.9364\text{E-}02 \pm 11.80$ %
	^{99}Mo	$6.6813\text{E-}02 \pm 6.80$ %
	^{103}Ru	$5.8640\text{E-}02 \pm 7.30$ %
	^{106}Ru	$1.5421\text{E-}02 \pm 19.40$ %
	^{137}Cs	$7.0334\text{E-}02 \pm 11.71$ %
	^{140}Ba	$5.8591\text{E-}02 \pm 9.90$ %
	^{144}Ce	$4.2716\text{E-}02 \pm 12.76$ %
^{239}Pu	^{95}Zr	$4.8805\text{E-}02 \pm 1.10$ %
	^{99}Mo	$6.1410\text{E-}02 \pm 0.70$ %
	^{103}Ru	$6.8709\text{E-}02 \pm 1.20$ %
	^{106}Ru	$4.3404\text{E-}02 \pm 2.30$ %
	^{137}Cs	$6.5796\text{E-}02 \pm 1.22$ %
	^{140}Ba	$5.2880\text{E-}02 \pm 1.10$ %
	^{144}Ce	$3.7623\text{E-}02 \pm 0.90$ %
^{241}Am	^{95}Zr	$3.9643\text{E-}02 \pm 3.00$ %
	^{99}Mo	$6.5724\text{E-}02 \pm 3.20$ %
	^{103}Ru	$7.1423\text{E-}02 \pm 6.10$ %
	^{106}Ru	$5.0867\text{E-}02 \pm 16.60$ %
	^{137}Cs	$7.2069\text{E-}02 \pm 6.60$ %
	^{140}Ba	$5.8045\text{E-}02 \pm 2.50$ %
	^{144}Ce	$3.3905\text{E-}02 \pm 3.70$ %

TABLE 3. IRDFF-II fast-neutron-induced fission yields (neutron energy $E_n \approx 400 - 500$ keV).

Target	Fission Product	Cumulative Fission Yield
^{232}Th	^{95}Zr	$5.4494\text{E-}02 \pm 2.90$ %
	^{99}Mo	$2.8740\text{E-}02 \pm 2.80$ %
	^{103}Ru	$1.5179\text{E-}03 \pm 6.30$ %
	^{106}Ru	$5.3236\text{E-}04 \pm 5.70$ %
	^{137}Cs	$6.1790\text{E-}02 \pm 5.12$ %
	^{140}Ba	$7.6222\text{E-}02 \pm 3.19$ %
	^{144}Ce	$7.6334\text{E-}02 \pm 6.12$ %
^{235}U	^{95}Zr	$6.4589\text{E-}02 \pm 1.30$ %
	^{99}Mo	$5.8957\text{E-}02 \pm 1.90$ %
	^{103}Ru	$3.2809\text{E-}02 \pm 1.40$ %
	^{106}Ru	$4.6597\text{E-}03 \pm 7.60$ %
	^{137}Cs	$5.8572\text{E-}02 \pm 1.92$ %
	^{140}Ba	$6.0586\text{E-}02 \pm 1.10$ %
	^{144}Ce	$5.1578\text{E-}02 \pm 1.80$ %
^{238}U	^{95}Zr	$5.2506\text{E-}02 \pm 1.60$ %
	^{99}Mo	$6.2147\text{E-}02 \pm 1.60$ %
	^{103}Ru	$6.0331\text{E-}02 \pm 1.80$ %
	^{106}Ru	$2.5063\text{E-}02 \pm 5.30$ %
	^{137}Cs	$6.0045\text{E-}02 \pm 2.33$ %
	^{140}Ba	$6.0457\text{E-}02 \pm 1.29$ %
	^{144}Ce	$4.6916\text{E-}02 \pm 2.25$ %
^{237}Np	^{95}Zr	$5.6715\text{E-}02 \pm 2.70$ %
	^{99}Mo	$7.7238\text{E-}02 \pm 16.90$ %
	^{103}Ru	$5.3778\text{E-}02 \pm 11.20$ %
	^{106}Ru	$2.2333\text{E-}02 \pm 10.80$ %
	^{137}Cs	$6.2129\text{E-}02 \pm 3.62$ %
	^{140}Ba	$5.7593\text{E-}02 \pm 2.00$ %
	^{144}Ce	$4.1743\text{E-}02 \pm 4.79$ %
^{239}Pu	^{95}Zr	$4.6909\text{E-}02 \pm 2.50$ %
	^{99}Mo	$5.8366\text{E-}02 \pm 2.30$ %
	^{103}Ru	$6.5709\text{E-}02 \pm 2.50$ %
	^{106}Ru	$4.0375\text{E-}02 \pm 7.80$ %
	^{137}Cs	$6.3098\text{E-}02 \pm 2.21$ %
	^{140}Ba	$5.2916\text{E-}02 \pm 1.50$ %
	^{144}Ce	$3.4994\text{E-}02 \pm 1.70$ %
^{241}Am	^{95}Zr	$4.1632\text{E-}02 \pm 8.20$ %
	^{99}Mo	$5.3596\text{E-}02 \pm 5.50$ %
	^{103}Ru	$6.5234\text{E-}02 \pm 6.70$ %
	^{106}Ru	$4.8254\text{E-}02 \pm 6.90$ %
	^{137}Cs	$6.2281\text{E-}02 \pm 18.80$ %
	^{140}Ba	$4.8853\text{E-}02 \pm 4.50$ %
	^{144}Ce	$3.4353\text{E-}02 \pm 6.80$ %

The typical cooling times that are necessary are listed below:

^{95}Zr	The longest lived member of the chain is ^{95}Y at 10.3 minutes. All the others are less than 1 minute. If we wait for 6 half-lives that would be 1 hour.
^{99}Mo	Longest half-life has ^{99m}Nb at 2.6 m, requiring cooling time of about 15 minutes.
$^{103}\text{Ru} - ^{103}\text{Tc}$	Half-life 54 s, ^{103}Mo half life 1.13 m, requiring cooling time of about 13 minutes.
$^{106}\text{Ru} - ^{106}\text{Tc}$	Half-life 36 s, requiring cooling time of about 3.6 minutes.
$^{137}\text{Cs} - ^{137}\text{Xe}$	Half-life 3.82 m, requiring cooling time of about 23 minutes.
$^{140}\text{Ba} - ^{140}\text{Cs}$	Half-life 1.06 m, requiring cooling time of about 6 minutes.
$^{144}\text{Ce} - ^{144}\text{La}$	Half-life 40.7 s, requiring cooling time of about 4.1 minutes.

It should also be noted that several radionuclides of these chains have Kr or Xe precursors. This means that part or all of the chain yield can be lost as Kr or Xe gas unless the fissionable material is irradiated in a gas tight container. This is a very well-known effect and actinides are commonly sealed in quartz to avoid losing any Kr or Xe, which would lead to a low reading of the cumulative fission product.

TABLE 4. IRDF-II 14 MeV neutron-induced fission yields (neutron energy $E_n \approx 14$ MeV, fusion applications).

Target	Fission Product	Cumulative Fission Yield
^{232}Th	^{95}Zr	$5.0470\text{E-}02 \pm 13.60 \%$
	^{99}Mo	$1.9747\text{E-}02 \pm 5.30 \%$
	^{103}Ru	$8.9252\text{E-}03 \pm 7.20 \%$
	^{106}Ru	$1.0873\text{E-}02 \pm 10.40 \%$
	^{137}Cs	$6.0482\text{E-}02 \pm 8.81 \%$
	^{140}Ba	$5.7087\text{E-}02 \pm 4.00 \%$
	^{144}Ce	$4.2355\text{E-}02 \pm 8.66 \%$
^{235}U	^{95}Zr	$5.0620\text{E-}02 \pm 4.30 \%$
	^{99}Mo	$5.0301\text{E-}02 \pm 2.80 \%$
	^{103}Ru	$3.1210\text{E-}02 \pm 4.40 \%$
	^{106}Ru	$1.8000\text{E-}02 \pm 16.80 \%$
	^{137}Cs	$5.7013\text{E-}02 \pm 24.00 \%$
	^{140}Ba	$4.4929\text{E-}02 \pm 1.90 \%$
	^{144}Ce	$3.1575\text{E-}02 \pm 1.30 \%$
^{238}U	^{95}Zr	$4.6389\text{E-}02 \pm 1.22 \%$
	^{99}Mo	$5.7713\text{E-}02 \pm 0.80 \%$
	^{103}Ru	$4.4881\text{E-}02 \pm 2.30 \%$
	^{106}Ru	$2.4945\text{E-}02 \pm 5.30 \%$
	^{137}Cs	$5.4359\text{E-}02 \pm 8.21 \%$
	^{140}Ba	$4.6437\text{E-}02 \pm 0.70 \%$
	^{144}Ce	$3.6147\text{E-}02 \pm 3.57 \%$
^{237}Np	^{95}Zr	$5.5453\text{E-}02 \pm 16.00 \%$
	^{99}Mo	$4.8632\text{E-}02 \pm 11.00 \%$
	^{103}Ru	$4.3312\text{E-}02 \pm 16.00 \%$
	^{106}Ru	$2.9975\text{E-}02 \pm 23.00 \%$
	^{137}Cs	$5.1076\text{E-}02 \pm 23.00 \%$
	^{140}Ba	$4.8131\text{E-}02 \pm 11.00 \%$
	^{144}Ce	$2.9997\text{E-}02 \pm 16.00 \%$
^{239}Pu	^{95}Zr	$4.3837\text{E-}02 \pm 6.00 \%$
	^{99}Mo	$5.6556\text{E-}02 \pm 5.00 \%$
	^{103}Ru	$5.8641\text{E-}02 \pm 6.00 \%$
	^{106}Ru	$3.5345\text{E-}02 \pm 8.00 \%$
	^{137}Cs	$5.0107\text{E-}02 \pm 8.00 \%$
	^{140}Ba	$4.0556\text{E-}02 \pm 5.00 \%$
	^{144}Ce	$2.9598\text{E-}02 \pm 5.00 \%$
^{241}Am	^{95}Zr	$3.1194\text{E-}02 \pm 6.00 \%$
	^{99}Mo	$4.3358\text{E-}02 \pm 6.00 \%$
	^{103}Ru	$5.0404\text{E-}02 \pm 6.00 \%$
	^{106}Ru	$4.0805\text{E-}02 \pm 6.00 \%$
	^{137}Cs	$4.2719\text{E-}02 \pm 6.00 \%$
	^{140}Ba	$3.3620\text{E-}02 \pm 6.00 \%$
	^{144}Ce	$2.4968\text{E-}02 \pm 6.00 \%$