

# Testing of Delayed Neutrons

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# ZPR-6/7 $\beta_{\text{eff}}$

## Dependence on ENDF/B Version

Cross Sections	Delayed Data	$\beta_{\text{eff}}$	Difference
ENDF/B V	ENDF/B V	3.36E-3	-2.4%
ENDF/B VI	ENDF/B VI	3.442E-3	Reference
ENDF/B VI	ENDF/B VII	3.442E-3	0.0%
ENDF/B VII	ENDF/B VII	3.435E-3	-0.2%

Change in Isotopic Contributions From VI to VII Delayed Data  
U-238 -0.05%; Pu-239 +0.07%

# U9 (ZPR-9/36,ZPR-6/9) $\beta_{\text{eff}}$ Dependence on ENDF/B Version

Cross Sections	Delayed Data	$\beta_{\text{eff}}$	Difference
ENDF/B VI	ENDF/B VI	7.222E-3	Reference
ENDF/B VI	ENDF/B VII	7.219E-3	-0.05%

Isotopic Contributions in ENDF/B VI

U-234 0.1%; U-235 53.3%; U-236 <0.1%; U-238 46.6%

Change in Isotopic Contributions From VI to VII Delayed Data

U-235 +0.05%; U-236 +0.31%; U-238 -0.16%

# ZPR-6/7 Kinetics Parameters

## % Change From ENDF/B VI to VII

Family	$\beta_i$	$a_i$	$\lambda_i$	$\beta_i/(1+3600\lambda_i)$	$L_d$
1	42.8	42.8	-6.5	52.4	
2	34.0	34.0	-1.8	36.4	
3	0.5	0.5	-19.8	25.1	
4	-1.8	-1.8	-9.0	7.8	
5	-19.7	-19.7	-12.9	-7.8	
6	-27.9	-27.9	26.4	-43.0	
family sum	0.0	0.0		33.2	33.4

# U9 Kinetics Parameters

## % Change From ENDF/B VI to VII

Family	$\beta_i$	$a_i$	$\lambda_i$	$\beta_i/(1+3600\lambda_i)$	$L_d$
1	39.5	39.6	-6.8	49.5	
2	23.5	23.6	-1.8	25.8	
3	4.2	4.3	-17.6	26.4	
4	5.1	5.2	-1.1	6.2	
5	-24.5	-24.4	14.1	-33.8	
6	-25.6	-25.6	68.1	-55.7	
family sum	0.0	0.0		26.1	26.3