

Isotope	KE	B.m.#	σ	E [MeV]
²² Na	1.370 MeV			0.511, 1.275
⁵⁴ Mn	0.84 MeV			0.835
⁶⁰ Co	1.17 MeV			1.173, 1.333
¹⁰⁹ Cd				0.088
¹³⁷ Ba				0.081, 0.276, 0.353, 0.355, 0.384

Chart doesn't work now that we know there are multiple energies

¹³⁷ Ba:	$b = 23.28 \pm 0.10$	← could be background will run control
	$b = 57.21 \pm 0.28$	(nothing visible in control)
	$b = 81.82 \pm 2.15$	
	$b = 196.6 \pm 0.1$	
	$b = 233.9 \pm 0.7$	← backscatter for 137Ba
	$b = 265.3 \pm 0.2$	← almost looks like an edge, but nothing follows it.
¹⁰⁹ Cd:	$b = 17.50 \pm 0.07$	109Cd
	$b = 62.27 \pm 0.06$	← this must be backscatter, but why so large?
⁶⁰ Co:	$b = 737.3 \pm 0.5$	
	$b = 835.6 \pm 0.3$	
⁵⁴ Mn:	$b = 530.0 \pm 1.2$	
²² Na:	$b = 330.4 \pm 0.5$	
	$b = 801.7 \pm 1.2$	

Unknown:	$b = 424.6 \pm 0.9$	
	$b = 24.20 \pm 0.52$	
	$b = 54.20 \pm 0.92$	← echo?
		$b = 702.7 \pm 1.7$

Control (No Source): No clear peaks

For Barium, the substance(s) are creating peaks as well

Edge ← Peak - Backscatter
Predict backscatter

$$\Delta\lambda = \lambda - \lambda_0 = \lambda_0 (1 - \cos\theta)$$

Backscatter, $\theta = 180^\circ \rightarrow \Delta\lambda = 2\lambda_0$

Energy $\rightarrow \lambda_0 \rightarrow \lambda_0 + 2\lambda_0 \rightarrow \lambda_{\text{backscatter}} \rightarrow \text{edge}$

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