

appendix

D

Mass Attenuation Coefficients for Water, NaI(Tl), Bi₄Ge₃O₁₂, Cd_{0.8}Zn_{0.2}Te, and Lead

Photon Energy (MeV)	Attenuation Coefficient, μ (cm ² /g) ^a				
	H ₂ O	NaI(Tl)	Bi ₄ Ge ₃ O ₁₂	Cd _{0.8} Zn _{0.2} Te	Pb
ρ (g/cm ³) →	1.00	3.67	7.13	5.81	11.34
0.02	0.721	20.7	65.8	21.4	84.0
0.0267	—	—	—	9.5	—
0.0267	—	—	—	25.8	—
0.03	0.329	6.71	22.6	19.1	28.9
0.0318	—	—	—	16.3	—
0.0318	—	—	—	33.2	—
0.0332	—	5.08	—	—	—
0.0332	—	29.87	—	—	—
0.04	0.240	18.35	10.5	18.2	13.4
0.05	0.208	10.18	5.76	10.0	7.39
0.06	0.192	6.23	3.53	6.10	4.53
0.08	0.176	2.86	1.66	2.78	2.11
0.088	—	—	—	—	1.65
0.088	—	—	—	—	7.42
0.0905	—	—	1.21	—	—
0.0905	—	—	4.92	—	—
0.1	0.165	1.58	3.82	1.52	5.34
0.15	0.148	0.566	1.39	0.544	1.91
0.2	0.136	0.302	0.696	0.290	0.936
0.3	0.118	0.153	0.294	0.148	0.373
0.4	0.106	0.110	0.179	0.107	0.215
0.5	0.0967	0.0904	0.131	0.0877	0.150

Photon Energy (MeV)	Attenuation Coefficient, μ (cm ² /g)*				
	H ₂ O	NaI(Tl)	Bi ₄ Ge ₃ O ₁₂	Cd _{0.8} Zn _{0.2} Te	Pb
ρ (g/cm ³) →	1.00	3.67	7.13	5.81	11.34
0.6	0.0894	0.0790	0.105	0.0769	0.117
0.8	0.0786	0.0657	0.0794	0.0641	0.0841
1.0	0.0707	0.0576	0.0661	0.0562	0.0680
1.022	0.0699	0.0569	0.0650	0.0556	0.0668
1.5	0.0575	0.0464	0.0506	0.0454	0.0509
2.0	0.0494	0.0412	0.0447	0.0404	0.0453
3.0	0.0397	0.0367	0.0402	0.0363	0.0420
4.0	0.0340	0.0351	0.0388	0.0350	0.0418
5.0	0.0303	0.0347	0.0387	0.0349	0.0426
6.0	0.0277	0.0348	0.0391	0.0352	0.0438
8.0	0.0243	0.0358	0.0406	0.0365	0.0467
10.0	0.0222	0.0372	0.0424	0.0382	0.0497

*Values without coherent scattering, obtained from reference 2 in Chapter 6.

H₂O, water; NaI(Tl), thallium-doped sodium iodide; Bi₄Ge₃O₁₂, bismuth germanate; Cd_{0.8}Zn_{0.2}Te, cadmium zinc telluride; Pb, lead.