TABLE 3.1 Minimum wavelength and wavelength of maximum X-ray emission as functions of tube voltage.

Tube Voltage, kV	Minimum Wavelength, nm	Wavelength of Maximum Emission,[A] nm
50	0.0248	0.0372
100	0.0124	0.0186
150	0.00827	0.0124
200	0.00620	0.00930
300	0.00413	0.00620
400	0.00310	0.00465
500	0.00248	0.00372
1000	0.00124	0.00186
2000	0.000620	0.000930
4000	0.000310	0.000465
6000	0.000207	0.000310
10000	0.000124	0.000186
15000	0.0000827	0.000124
30000	0.0000413	0.0000620

[A]Approximate, per equation (3.3).

TABLE 3.2 Characteristics of some gamma-ray sources [1,2].[A]

Isotope	Half-Life	Gamma-Ray Energy, MeV	Dosage Rate	
			R/Ci-h at 1 m	R/Ci-h at 1 ft
Cesium 137	30 y	0.662	0.32	3.4
Cobalt 60	5.27 y	1.17, 1.33	1.30	14.0
Iridium 192	74 d	0.216 to 0.612	0.48	5.2
Radium 226	1622 y	0.047 to 2.4	0.825	8.88
Selenium 75	120 d	0.066 to 0.401	0.203	2.18
Thulium 170	128 d	0.052, 0.084	0.025	0.27
Ytterbium 169	32 d	0.063 to 0.308	0.125	1.34

[A]Numerals in brackets designate references listed at the end of the chapter.

B. Absorption/Attenuation

The basic law of X-ray absorption is given by

$$I_x = I_0 e^{-\mu x} \tag{3.4}$$

where x is the thickness of the material, I_0 is the incident intensity of radiation, I_x is the transmitted intensity, and μ is the *linear*