

Table 1.5: Physical properties of noble liquids (adapted from Ref. (98)).

	LAr	LKr	LXe
Atomic Number Z	18	36	54
Atomic Weight A	39.95	83.8	131.3
Density (g/cc)	1.39	2.45	3.06
Melting Point T_m (K)	83.8	115.8	161.4
Boiling Point T_b (K)	87.3	119.8	165.1
Critical Temperature T_c (K)	150.7	209.5	289.7
Critical Pressure P_c (atm)	48.3	54.3	57.64
Critical Density (g/cc)	0.54	0.91	1.10
Volume Ratio (ρ_l/ρ_g)	784	641	519
Fano Factor	0.107	0.057	0.041
Drift Velocity (mm/ μ sec) @ 1(5) kV/cm	1.8(3.0)	2.4(4.0)	2.2(2.7)
Mobility (cm $V^{-1}s^{-1}$)	525	1800	2000
Radiation Length (cm)	14.3	4.76	2.77
(dE/dx) (MeV/cm)	2.11	3.45	3.89
Liquid Heat Capacity (cal/g-mole/K)	10.05	10.7	10.65
W-value (eV) (ionization)	23.3	18.6	15.6
W-value (eV) (scintillation)	19.5	15.5	14.7
Wavelength of Scintillation Light (nm)	130	150	175
Decay const.			
fast (ns)	6.5	2	2
slow (ns)	1100	85	30
Refractive index @ 170 nm	–	1.41	1.60
Dielectric constant	1.51	1.66	1.95