

Useful mathematical formulae & conversions

1	$\frac{Bq}{cm^2}$	=	$\frac{CPM_{net}}{C.E. \times 60 \times 100 \times Weff}$ C.E → Counting Efficiency → 50% or 0.5 Weff → Wipe Efficiency → 10% or 0.1 for wet wipes → 1% or 0.01 for dry wipes
2	% Counting Efficiency	=	$\frac{CPM \text{ (Counts per minute)}}{DPM \text{ (Disintegration per minute)}}$
3	$\frac{DPM}{60 \text{ secs}}$	=	Becquerel (Bq)
4	Becquerel	=	1 disintegration/second (DPS)
5	Curie	=	3.7×10^{10} Becquerels
6	Curie	=	2.22×10^{12} DPM
7	Inverse Square Law (ISL)	=	$I_1 d_1^2 = I_2 d_2^2$ I ₁ = radiation field at distance d ₁ I ₂ = radiation field at distance d ₂
8	$A_f = \frac{A_i}{2^N}$	=	A _f = final activity A _i = initial activity $N = \frac{t}{T} *$ t = time elapsed T = half life of radioisotope * Maintain same units