RSSI

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CALCULATION OF EXPOSURE AND CONCENTRATION IN SI UNITS

The integrated exposure (E) in pCi-days/L is calculated from the gross track count (R_T) , the background track count (R_b), the correction factor for overlapping tracks(τ), and the exposure conversion factor (ECF).

$$E = ECF\left(\frac{R_T - R_b}{1 - (\tau * R_T)}\right)$$

Where:

E = the exposure in Bq-days/m^3,
ECF = the exposure conversion factor - sheet dependant, average = 5.9 Bq-days m^{-3} /track
R_T = gross tracks,
R_b = background tracks – sheet dependant, average = 33, and
τ = overlap correction factor = 0.000035.

For estimated track densities, the above equation simplifies to to:

$$E = ECF \times R_T$$

The concentration (C) in Bq/m^3 is calculated From E and the exposure interval (d) in days.

$$C = E/d$$

or

$$E = ECF\left(\frac{R_T - R_b}{(1 - (\tau * R_T)d)}\right)$$