

Conversion from CPM to Bq/cm²

$$\frac{\text{CPM} - \text{CPM}_{(\text{Background})}}{60} \times \frac{100}{\text{detector efficiency}}$$

$$\text{Monitoring Area in cm}^2$$

If we consider the detector is 5% efficient

$$\frac{\frac{450}{60} \times \frac{100}{5}}{10} = 15 \text{ Bq/cm}^2$$

More than contamination limit. so it is unsafe.

When we consider an ideal detector
(not possible in ~~practic~~ reality)

Efficiency = 100%

$$\frac{\frac{450}{60} \times \frac{100}{100}}{10} = 0.75 \text{ Bq/cm}^2$$

It is less than contamination limit and it is safe