

## Activity unit (radioactivity unit)

The ISO measuring unit of radioactivity is the **becquerel (Bq)**:

**1 Bq = 1 decay per second.**

One becquerel is a very small unit in comparison with the legacy non-metric unit "curie". One curie is the activity of about one gram of the radium isotope 226 (radium-226 or  $^{226}\text{Ra}$ ) and corresponds to 37 billion becquerels (37 gigabecquerel or 37 GBq).

Note: the amount of radioactivity does not say much about the health risks involved without specifying the kind of radiation released (e.g., alpha-, beta-, gamma- or neutron-radiation) and the energy the radiation carries (usually expressed in million electron-volts or MeV).

### **For comparison:**

- *A medical radiotherapy machine typically contains 50 trillion becquerel (50 terabecquerel or 50 TBq) of caesium-137 ( $^{137}\text{Cs}$ ).*
- *On the other hand, water containing less than 8 Bq/kg of  $^{137}\text{Cs}$  is considered safe for consumption.*
- *The same is true for water containing less than 7000 Bq/kg of hydrogen-3 ( $^3\text{H}$  – also called tritium) and it is considered safe for drinking.*
- *An average human body contains about 10 thousand becquerel (10 kilobecquerel or 10 kBq) of naturally radioactive substances (mainly potassium-40 or  $^{40}\text{K}$  and carbon-14 or  $^{14}\text{C}$ ).*