

## Radiation Measurements

**Dose:** The amount of energy absorbed by matter received from ionizing radiation per unit mass of matter; expressed in rads.

**Exposure:** A measure of the ionization produced in air by x- or gamma radiation; expressed in roentgens (R).

*Although “dose” and “exposure” often are used interchangeably, a dose is a measurement of energy absorbed in body tissue, while exposure is a measurement of ionizations in the air due to the presence of radiation.*

**Rad:** Unit of radiation dose.

**Roentgen (R):** Unit of exposure, applicable only to X- and gamma radiations.

**Rem:** A unit used to express all types of ionizing radiation on a common scale to indicate relative biological effects.

For beta and gamma radiation: exposure to 1 roentgen delivers a dose of 1 rad, which is equivalent to 1 rem.

**Curie (Ci):** Amount of radioactive material in which 37 billion atoms decay per second. The rate at which radioactive material is released into the environment may be expressed in unites of curies per second (Ci/sec.).

**Milli-(m):** One-thousandth of a unit ( $10^{-3}$ ), i.e., millirem (mRem) or milliroentgen (mR).

**Micro-(u):** One-millionth of a unit ( $10^{-6}$ ).

**Pico:** One-trillionth of a unit ( $10^{-12}$ ).