

Radon is harder to detect and contain than the others, and difficult to filter. But there are ways to keep it out of the house.

What it is

Radon is a radioactive gas that occurs naturally in low concentrations almost everywhere on earth. As with the other noble gases—helium, neon, and argon among them—you can't see, taste, or smell radon, and it doesn't react with other chemicals. Radon is rather soluble in water, which means that water will absorb it much as it absorbs CO₂ and becomes carbonated water.

Radon is the first product formed in the radioactive decay of radium, which is itself a decay product of naturally occurring uranium. As radon decays it emits small amounts of radiation. The products that result are called radon daughters or radon progeny. When radon is in the air or water, so are its daughter products. Usually radon is replenished with a fresh supply from its source even as it decays.

Where it comes from

Naturally occurring radon gas can come from several sources. High concentrations have been traced to large deposits of granite or sillimanite rock. In the Northeast, coarse sand and gravel from granite ground

[Click in the top of this page for online articles about Radon cause, cure, prevention, and other indoor air quality topics at **InspectAPedia.com**](#)



Radon levels in soil, water, or air are often measured with track-etch detectors. This one is available from Terradex Corp. The monitor is left in place for about three months, then sent back to Terradex for a reading and a report.

up by glacial activity have also been linked to high levels. The larger surface area of sand particles seems to let the radon escape at a higher rate than it does from solid bedrock.

Because radon gas is soluble in water, water flowing through the rock or sand can easily pick it up. Thus groundwater that has recently reached the surface may carry high levels of radon.

How it gets indoors

Radon may end up in the indoor environment via several paths. Building materials may emit them, as they have in Sweden and the United States when radioactive shales or mine tailings were used in construction materials. It can enter through small or large leaks in a basement floor, originating as soil gas from beneath the building. It can also enter as groundwater—the radon outgases as the water is exposed to air during normal household use, such as showering.

Why it's a problem

When a person inhales or ingests radon gas or its progeny, the material continues to release small amounts of radiation, which can affect living cells. Cells are damaged or die as a normal part of living, but when this process is accelerated, as it may be in the