



Tritium in Exit Signs

Many exit signs contain tritiumⁱ to light the sign without batteries or electricity.

- Using tritium in exit signs allows the sign to remain lit if the power goes out.
- Tritium is most dangerous when it is inhaled or swallowed.
- Never tamper with a tritium exit sign.
- If a tritium exit sign is broken, **leave the area immediately** and call for help.

About Tritium in Exit Signs

Exit signs are mounted in almost every building we enter; schools, grocery stores, movie theaters and shopping malls. Many exit signs contain tritium, the radioactive form of hydrogen. When tritium is mixed with certain chemicals, it creates a continuous, self-powered light source. Tritium exit signs are used when dim light is needed, but using batteries or electricity is not possible. Tritium can be naturally produced or man-made. Exit signs use man-made tritium.

Using tritium in exit signs allows the sign to remain lit if the power goes out as it might if there is a storm or a fire. If a tritium exit sign is severely damaged the tritium could be released. Because a damaged tritium exit sign will have relatively high levels of tritium in it, you should leave the area immediately and call for help.

Damage to tritium exit signs is most likely to occur when a sign is dropped during installation or smashed in the demolition of a building. Unwanted **tritium exit signs may not be put into ordinary trash**. Tritium exit signs that are illegally put in ordinary landfills can break and contaminate the groundwater. Tritium exit signs require special disposal. The person who was put in charge of the tritium exit signs when they were purchased is responsible for disposing of them. That person must follow special rules for their disposal.

Tritium emits beta particles, which are most harmful when inhaled or swallowed. Internal contamination occurs when people swallow or breathe in radioactive materials, or when radioactive materials enter the body through an open wound or are absorbed through the skin. Tritium must be ingested in large amounts to pose a significant health risk.



Exit Sign

Remember: If a tritium exit sign is broken, leave the area immediately.

Rules and Guidance

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

Under the Clean Air Actⁱⁱ, EPA sets limits for the release of hazardous air pollutants like tritium into the air. Under the Safe Drinking Water Actⁱⁱⁱ, EPA sets limits for acceptable levels of tritium in drinking water. Under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)^{iv}, commonly known as Superfund, EPA responds directly to releases or threatened releases of hazardous substances like tritium.

U.S. NUCLEAR REGULATORY COMMISSION (NRC)

Manufacturers and distributors of tritium exit signs must receive a radioactive materials license from NRC or an Agreement State. Facilities that use tritium exit signs must put one person in charge of making sure that NRC or Agreement State regulations are followed. These regulations include such rules as ensuring that the radioactive symbol remains on the sign, making sure signs are disposed of properly and notifying NRC or the Agreement State when a sign is no longer in use.

U.S. DEPARTMENT OF LABOR (DOL), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

The Department of Labor's Occupational Safety and Health Administration makes rules and standards to keep workers safe in many workplace settings including construction and demolition.

THE STATES

Each state has a radiation safety program that will respond to and investigate incidents involving tritium and other radionuclides.

Most states have signed formal agreements with NRC, providing the states regulatory responsibility over small quantities of special nuclear material and its source and byproducts. These states are known as Agreement States.

What you can do

Tritium exit signs are the responsibility of building owners. However, it's important to:

- Learn to recognize tritium exit signs. Tritium exit signs use tubes that contain tritium to spell out the word "EXIT" in green or red glowing light when the lights are out. They should be labeled as having tritium inside.
- Never tamper with a tritium exit sign.
- Learn to recognize a damaged tritium EXIT sign. All four letters in "EXIT" should be lit. If a letter or part of a letter is not lit, the sign may be damaged.
- Do not touch a damaged tritium EXIT sign.
- Leave the area around a damaged tritium EXIT sign immediately.
- Report damaged tritium exit signs. At school, you should report the damaged sign to a teacher, a janitor or someone in the main office. In other buildings, you can report the problem to a security guard.

Where to learn more

You can learn more about tritium exit signs by visiting the resources available on the following webpage: <http://www3.epa.gov/radtown/tritium-exit-signs.html#learn-more>.

ⁱ <http://www2.epa.gov/radiation/radionuclide-basics-tritium>

ⁱⁱ http://www3.epa.gov/airquality/peg_caa/

ⁱⁱⁱ <http://water.epa.gov/lawsregs/rulesregs/sdwa/>

^{iv} <http://www2.epa.gov/laws-regulations/summary-comprehensive-environmental-response-compensation-and-liability-act>