



Tritium Exit Sign Owner Responsibilities

The Bureau of Radiation Protection (BRP) has prepared this fact sheet to inform the owners of tritium exit signs of the proper disposal methods and the hazards associated with these devices.

What is tritium?

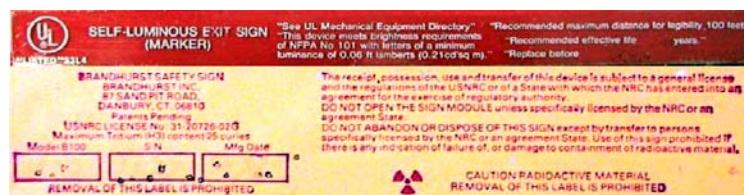
Tritium is a radioactive isotope of the element hydrogen.

What are tritium exit signs and how can I identify them?

Tritium exit signs are signs that display the word "exit" to identify the designated exit route from a building or enclosed space. They are typically used in buildings to illuminate egress routes in areas where access to electrical service is unreliable, unavailable or costly. Tritium exit signs are self-luminous and require no electrical power.



This type of exit sign can be distinguished from others by observation. The signs illuminate with a greenish glow emanating from several sealed glass tubes arranged into the word "exit." Another indication that the sign may be a tritium exit sign is the lack of evidence of an electrical power supply. The sign may also be identified by the required labeling, similar to that shown below, which includes the three bladed radiation symbol and the words "Caution – Radioactive Material," as well as other information about the quantity of radioactive tritium and the manufacturer.



Regulation of Tritium EXIT Signs

Tritium exit signs are regulated by the Nuclear Regulatory Commission (NRC) under federal regulations (10 CFR 32.51 and 31.5a) or by a state authorized to administer its own comparable program (an Agreement State). Under the NRC regulations, certain persons (general public excluded) have a general license to acquire and use these devices. There are more than 60,000 tritium exit signs in use in the Commonwealth of Pennsylvania, according to estimates derived from the NRC.

What is the concern?

Recent testing performed by the Pennsylvania Department of Environmental Protection (DEP) has identified tritium contamination in many of the landfills throughout the Commonwealth. DEP believes that illegal disposal of tritium signs is the cause. Often, building maintenance personnel or construction/demolition workers may be unaware that the devices contain radioactive material. As a result, these devices may end up in landfills, incinerators and at scrap metal recycling facilities.

What can I do?

As an owner of these devices, it is important to know that tritium exit signs must be disposed of or recycled properly. To that end, the following management practices should be considered:

Ensure that building maintenance staff and employees are aware of the need to use caution when working on or removing tritium signs.

- Ensure that all staff are aware that a broken tritium exit sign has the potential to result in contamination and potential radiation dose to people, property and the environment.
- Ensure that all staff are aware of the special handling and disposal requirements for these devices.
- Ensure that employees are aware that tritium signs are not to be disposed of in the ordinary trash.
- Ensure that when tritium signs are to be removed or replaced, they are returned to the manufacturer or a low-level radioactive waste site for disposal.
- Maintain an inventory of tritium exit signs including their age, location and condition. Check these at least annually.

In addition to ensuring proper handling and disposal, owners should consider alternative technologies when replacing these devices. The Product Stewardship Institute (PSI) was awarded an Environmental Protection Agency (EPA) grant to identify and implement product stewardship solutions for devices containing radioactive materials and may be helpful in making replacement decisions. The PSI web site contains contact information for businesses that are licensed to receive and handle used tritium exit signs. For additional information, contact the Bureau of Radiation Protection at 717-787-2480, or visit the PSI web site at www.productstewardship.us.

How do I ensure safe and legal disposal?

Contact the sign manufacturer for instructions and return cost information. If the manufacturer is unable to accept return of the device, other manufacturers of similar devices, provided they are licensed to accept tritium, may accept the signs. Alternately, you may consider use of a radioactive waste broker or processor to perform packaging, transport and disposal of unwanted tritium signs.

Where can I find additional information?

For a list of radioactive waste brokers and processors, contact DEP's Bureau of Radiation Protection (717-787-2480).

For more information regarding your responsibilities concerning these or other radioactive materials, contact your regional Bureau of Radiation Protection or visit www.depweb.state.pa.us, keyword: Tritium.