

Household Smoke Detector Safety and Disposal

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Household smoke detectors, also referred to as ionization chamber smoke detectors, use radioactive material to sense smoke in the air and warn of fire hazards. The radiation source in these smoke detectors is usually a small amount of americium-241 that does not pose a risk to the user of the smoke detector.

How do ionization chamber smoke detectors work?

The americium-241 in ionization chamber smoke detectors makes the air in the detector's sensing chamber conduct electricity. When smoke enters the sensing chamber, it interrupts the electrical current, triggering the smoke detector's alarm.

Is the radiation from ionization chamber smoke detectors dangerous?

The radiation source in ionization chamber smoke detectors is sandwiched between metal foils, which keep the radioactive material well contained.



The tiny amount of radiation that can be measured outside the unit does not pose any health risk. In fact, the average annual radiation dose a person receives from a smoke detector is 0.01% of the dose they receive from natural background radiation.

Quick Facts

- Smoke detectors can be disposed of in household garbage.
- Smoke detectors do not pose any health risk.
- The Canadian Nuclear Safety Commission (CNSC) licenses the manufacturing and initial distribution of smoke detectors in Canada.
- Smoke detectors must comply with standards that involve approximately one hundred individual tests

How do I dispose of my household smoke detector?

You can dispose of your household smoke detectors in regular municipal household garbage, but not in recycling or composting waste.

What if I have multiple detectors to dispose of?

There is no limit on the total number of smoke detectors that can be disposed of at one time.

What is the role of the Canadian Nuclear Safety Commission?

The Canadian Nuclear Safety Commission (CNSC) licenses the manufacturing and initial distribution of ionization chamber smoke detectors in Canada. All smoke detectors containing a radioactive source sold within Canada are approved on a model-by-model basis and must meet the radiation safety standards before being distributed.



The CNSC regulates the use of nuclear energy and materials to protect the health, safety and security of Canadians and the environment, and to respect Canada's international commitments on the peaceful use of nuclear energy.

Where do I get more information?

- [Canadian Nuclear Association Smoke Detector Factsheet](#)

If you have any other questions about smoke detector safety and disposal, [contact the CNSC](#).

For more information:

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