

In Theory – 2

Ionizers Based on Safe Nuclear Technology

Are they safe?

That's a question asked frequently about NRD nuclear ionizers. And it's a question that's been answered positively for more than two decades. NRD technology has been in use - without incident - since 1969 for static control, smoke detectors, physics research, space exploration, and instrumentation. All over the world, workers in various industries use NRD products safely to obtain better quality and higher productivity.

Because our products use nuclear technology, questions about safety are often raised. Understanding the technology and how it's used should help dispel any concerns.

The energy source

NRD ionizers use an internal energy source, a naturally occurring radioisotope called Polonium-210. Exceptionally effective as an ion source to neutralize static charges, Polonium-210 poses no hazard to workers or materials. With more than two decades of field use in NRD products, there's never been a single failure. Naturally, our products must meet strict standards of testing. In addition to our own comprehensive production and quality tests, they have successfully completed all test and evaluation programs required by the U.S. government.

We use a patented encapsulation process to lock the radioisotope inside a solid foil of pressure-welded gold and silver, assuring the most safely sealed ionization source available. Since the foil is made of precious metals, it's highly resistant to oxidation, extreme temperatures, or exposure to solvents.

How it works

Safely locked inside the ionizer, Polonium-210 releases a form of energy known as alpha energy. Alpha energy "collides" with the air, and ionized air is generated to neutralize static charges on the surface. Static charges are neutralized right at the source, with the ionization process remaining in

constant balance. The alpha energy itself is contained within the ionizer. Since alpha energy is not capable of penetrating even paper, there is no possibility of it causing exposure from outside your body. NRD ionizers do not cause any measurable exposure, even if the unit is subject to the types of impact or vibration common in industrial use.

Safe to use anywhere

You can use NRD ionizers just about anywhere static is a problem – even in places that are not safe for electrical ionizers, such as volatile, solvent-laden environments, tight spaces, or applications with sensitive electronics.

There's no risk of electrical shock because there are no high-voltage power supplies. There's no danger of puncture wounds or other physical injuries from sharp emitter points. And there's no radio frequency generated by NRD ionizers that might upset process equipment controllers.

Did you know...

There are several types of nuclear energy. Many everyday environments use material that produces measurable human exposures, including:

- Smoke detectors
- Gas cooking ranges
- Televisions
- Medical X-rays
- Bricks and masonry

NRD ionizers use a safe, effective, totally encapsulated source of nuclear energy. They blow out ionized air, not nuclear energy. And they do not cause any measurable exposure.



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