

Controlling Ferret Odor

What's Wrong With Ozone Generators?

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Marketed as "air cleaners" and "odor reducers" ozone generators are purported to "control animal-related odors, and to reduce or eliminate environmental toxins, microbes, and allergens." Although there are claims of indoor ozone's "safety and efficacy" in preventing allergies, asthma, and respiratory infections by reducing or neutralizing air-borne particles, these claims are unsubstantiated and refuted by the Food and Drug Administration (FDA), Environmental Protection Agency, and the Federal Trade Commission. Based on the current scientific evidence, the AFA recommends against the use of ozone generators and other air cleaners that are not approved for use in occupied spaces.

In the past decade, ozone generators, machines or devices that produce ozone (O₃, trivalent oxygen, or saturated oxygen), have been marketed heavily to professionals and consumers who work with and around animals. Ozone device vendors are a consistent presence at pet expos, animal shows, and veterinary professional conferences.

Although ozone has been used successfully in water purification treatments for more than a century, its use in removing indoor air pollution is not only unproven, it may even be hazardous to your and your animals' health.

Why is Breathing Ozone Harmful?

Ozone is toxic gas which is normally found in the Earth's upper atmosphere. Ozone generated indoors by devices is identical to the ozone found outdoors.

Its properties are very different from oxygen, which is a life-sustaining gas. Oxygen gas usually exists as a divalent molecule, (O₂), that is, two oxygen atoms united, which produces the stable gas that we breathe with other gases in air. The addition of a third oxygen atom to make ozone (O₃) creates a molecule that is highly unstable and that reacts with organic material to release oxygen and carbon dioxide. In this way ozone can react and kill viruses or fungi outside the body, but by the same mechanism it can also damage organic material inside the body, such as the tissues lining the lungs and nasal passages of humans and animals.

What are the Harmful Effects of Ozone?

Even at relatively low levels, ozone can damage the lungs and airways when inhaled. Harmful effects caused by inhaling ozone include coughing, chest pain, throat irritation, nausea, and congestion. Conditions such as asthma, bronchitis, emphysema, and heart disease may worsen from exposure to ozone, and ozone can also hinder the body's defense systems against respiratory infections. The Environmental Protection Agency reports that the longer the exposure and the higher the ozone level, the less certain is the likelihood for complete reversal of ozone's toxic effects on the body.

Are There "Approved" Ozone Generators?

Currently no ozone generator has been approved by the federal government for use in spaces occupied by humans or animals. In 1995 the Federal Trade Commission took action against two

ECE REACHES ONTARIO

According to the Canadian Ferret Aid Society, epizootic catarrhal enteritis (ECE) has reached the ferrets of Canada. (Ferret Mailing List March 24, 1998).

"For years we have sat back, feeling sorry for our American neighbors who were dealing with ECE. Now, we are feeling sorry for ourselves. ECE has popped up in Ottawa, Hamilton and now Toronto, too," stated a Paige Townsend, a representative of the Canadian shelters. ECE infection was confirmed by post mortem pathology.

The source of the disease in Hamilton, Ontario, was traced back to the handling of asymptomatic kits in a pet store. Shelter directors warn that touching ferrets with unknown histories should be followed by a shower and a change of clothing before playing with personal pet ferrets.

The Canadian shelters are searching for information regarding ECE, wrote Townsend on the Ferret Mailing List. "Hopefully, we can arm our local vets, pet stores and ferret community with enough warning and information as possible to minimize fatalities," she stated.

vendors of ozone generators because of the unsubstantiated claims they were making about their products' abilities to cleanse the indoor environment of air pollutants and to prevent or relieve allergies. While the Food and Drug Administration

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has approved a small percentage of other air cleaners that claim a health benefit, these devices must conform to FDA regulations.

Are There Regulations for Ozone Emission?

The FDA has set a limit of 0.05 parts per million of ozone for medical devices, and other agencies have slightly higher exposure limits. Neither the FDA nor the American Lung Association recommend the use of ozone generators, negative ion generators, and certain other electronic air cleaners that are not listed by the FDA or cannot otherwise prove that their ozone emission levels are lower than 0.05 ppm, since they may produce levels of ozone recognized as unsafe for humans or animals.

Doesn't Ozone Reduce Indoor Contaminants in the Air?

While ozone may indeed kill unwanted contaminants in the air, it cannot accomplish this at levels that are safe for human or animal occupancy. Available scientific evidence shows that at concentrations that do not exceed public health standards, ozone has little potential to remove indoor air contaminants for several reasons.

The reaction process with ozone may take months or years to reduce indoor chemicals and is not effective in removing carbon monoxide, a toxic by-product of the chemical reaction of ozone with other chemicals.

Although ozone may reduce some contaminants, the reaction may actually produce a variety of harmful or irritating by-products.

Ozone does not remove those particles from the air, including dust and pollen, that cause most allergies.

Although some data suggest that low levels of ozone may reduce airborne concentrations and inhibit the growth of some biological organisms while the ozone is present, the concentration of ozone would have to be 5 to 10 times higher than public health standards allow before the ozone could decontaminate the air sufficiently to prevent survival and regeneration of the organisms once the ozone is removed.

Even at high concentrations, ozone may have no effect on biological contaminants embedded in porous material.

But Do Ozone Generators Reduce Odor?

There is no scientific evidence to show that at concentrations that do not exceed public health standards, ozone is effective at removing many odor-causing chemicals.

So Then, How Can Ferret Odor Be Controlled?

There are several approaches to control ferret and other animal odors in the veterinary hospital, ferret shelter, or home.

Eliminate the source of the odor (no we don't mean give up the ferret!) by neutering whole male ferrets (hormones are a major source of hob odor); more frequently cleaning cages; discarding cages and cage appliances made from porous materials such as wood, cardboard, and carpet; and cleaning water bottles, food receptacles, and litter boxes daily.

Increase ventilation of the indoor space. House animals in rooms with

good ventilation to the outside or with appropriate ventilation systems; install an exhaust fan; increase air flow in mechanical ventilation systems; and, where possible, open windows. Most animals should be housed in rooms where the air is circulated 20 times an hour.

Remove pollutants through proven air cleaning methods. Air cleaning should be combined with the above approaches, and is not regarded as sufficient by itself.

SOURCES

U.S. EPA's Indoor Air Quality Information Clearinghouse (IAQ INFO), P.O. Box 37133, Washington, D.C. 20013-7133. 1-800-438-4318.

Federal Trade Commission Response Center, Washington, D.C. 202-326-3128.

U.S. Consumer Product Safety Commission, Washington, D.C. 20207. Consumer Hotline (English/Spanish) 1-800-638-2772; (Hearing/Speech Impaired) 1-800-638-8270.

EPA Internet Address: <http://www.epa.gov/faq/pubs/ozonegen.html>.

FOR FURTHER READING

The Inside Story: A guide to indoor air quality. 402K93007, U.S. EPA, U.S. CPSC. April 1995.

Indoor Air Facts No. 7: Residential air cleaners. EPA 20A-4001. U.S. EPA. February 1990.

Residential Air Cleaning Devices: A summary of available information. 402K96001. U.S. EPA.

Indoor Air Pollution: An introduction for health professionals. 402R94007. American Lung Association, EPA, CPSC, American Medical Association.

Copies of the above materials are available by calling 1-800-490-9198, or by contacting the National Center for Environmental Publications and Information.