

California Environmental Protection Agency Warns:

Danger from Popular Air Purifying Machines

The California Air Resources Board (ARB) heard evidence revealing the unrecognized danger from indoor air purifiers known as ozone generators. Sold as indoor air cleaners, indoor air purifiers, and personal air purifiers, they intentionally emit large amounts of ozone, a criteria air pollutant, purportedly to clean the air.

"These machines are insidious. Marketed as a strong defense against indoor air pollution, they emit ozone, the same chemical that the ARB and the USEPA (U.S. Environmental Protection Agency) have been trying to eliminate from our air for decades," said acting ARB Chairperson Barbara Riordan. "More chilling is that some people susceptible to the ill effects of ozone will eagerly bring these Trojan horses home."

In a update of health research to Board members, ARB staff reported the results from multiple studies of ozone generating machines. These devices sold as indoor air cleaners, indoor air purifiers, and personal air purifiers, purposely emit ozone, the major component of smog, to clean the air. One study, conducted by the USEPA, ran an ozone generator in a test home at its maximum setting. When the room's air was sampled, ozone levels were found exceeding 0.3 parts per million (ppm),

and an adjacent room's levels exceeded 0.2 ppm. This level is equal to a stage one smog alert when local air pollution control districts advise the public to avoid some outdoor activities. These readings far exceed the state's ambient one-hour standard for ozone of 0.09 ppm, and any recently observed outdoor peak levels in California. At the machine's medium setting, even with the home's central fan turned on, ozone levels still exceeded the state standard. These findings force the Board to recommend the public avoid using these devices.

ARB scientists expressed concern, since some manufacturers aggressively market these products to individuals with asthma and other respiratory and health problems. Ozone can damage the cells lining nasal passages and lungs making it difficult to breathe and can exacerbate asthma symptoms. At the ozone levels noted above, some people would experience reductions in lung function, particularly if they engage in significant indoor activity (ie., housework, use of exercise equipment, children in active play), as well as symptoms such as pain on deep breath, cough and chest tightness. Elevated ozone levels can also damage household materials, such as carpeting and paint, as well as react indoors to form

increased levels of formaldehyde and ultra-fine particulate matter; with their compounding negative health effects. If a family were to leave these machines on constantly, it would be as though the family lived in a 24 hour/seven day a week stage-one smog alert.

With public concern about indoor air quality rising, advertising and sales of these devices is increasing. Manufacturers often falsely claim that these devices eliminate bacteria, mold, and chemical contaminants from the air, and that they help persons with asthma and allergies. Independent studies by the USEPA, the Consumers Union, and others have shown that these devices do not effectively destroy microbes, remove odor sources, or reduce indoor pollutants enough to provide any health benefits. Ozone masks the odor of other indoor pollutants by deadening the sense of smell. Although ozone is used effectively in water to destroy microbes, ozone in air must reach extremely hazardous levels (50-100 times the outdoor air quality standards) to effectively kill microbes.

The ARB and a handful of other state and federal agencies have taken actions in an attempt to address this health issue. However, no agency has clear authority to control ozone emissions

tions to date have not been effective in addressing this problem. For more information on air purifiers see the ARB website [here](#), or for the staff presentation to the board click [here](#).

The Air Resources Board is a department of the California Environmental Protection Agency. ARB's mission is to promote and protect public health, welfare, and ecological resources through effective reduction of air pollutants while recognizing and considering effects on the economy. The ARB oversees all air pollution control efforts in California to attain and maintain health based air quality standards.

**OZONE IS REALLY
OXYGEN TO THE
THIRD POWER or
O₃**