



Improper Use of Canned-air Products Can Cause Flash Fires and Injury

Employers: These products are commonly used in offices and other businesses to remove dust from computers, shredders, and other electronic equipment. Without training, users may not follow safe use practices because they mistakenly assume these products contain harmless, pressurized air. One recent incident highlights the importance of this issue:

An employee working in a bowling alley suffered burns to her face due to a flash fire while cleaning a paper shredder using a canned-air product. The employee tilted the can, which released its contents as a liquid onto the shredder. As the liquid became a gas, it suddenly created a zone of highly concentrated, flammable gas that was easily ignited.

What is 'canned air'?

'Canned air' is not the air you breathe. Canned-air products contain a gas that is mostly compressed into a liquid. A variety of gases are used in these products and **some** are highly flammable. One example of a commonly-used, highly-flammable gas is difluoroethane.

The only sure way to know what's really in the can is to check the product label or the Material Safety Data Sheet (MSDS) for the product.

How does canned air become hazardous?

The hazard risks posed by a particular canned-air product depend on what's in the can and how the product is used.

Flammable ingredients. Safe use of these products requires the user to keep the can in an upright position during spraying. This upright position allows only the gas layer above the liquid to be released from the nozzle. **Unsafe use** occurs when the can is **tilted**, allowing the liquefied gas to be released from the nozzle and saturate the air and any surfaces it contacts.

If the immediate use area is enclosed or poorly ventilated, the gas is more likely to become concentrated, creating a flammable atmosphere. Ignition sources such as electrical switches, flames, and sparks inside the immediate use area can easily ignite the concentrated gas.

Frostbite. When any canned-air product is used you can feel the can become colder. This effect is caused by gas expansion, and the liquid inside is even colder. If expelled, the liquid can quickly and deeply chill skin, fingers, and any other part of the body it contacts. Exposure to a steady stream of this liquid can cause serious frostbite with physical injury such as deep cracking and damage to muscles, nerves, and blood vessels. Even mild frostbite can cause an intense burning pain as skin thaws. To prevent frostbite, most canned-air products carry a warning not to tilt or shake the can.

Asphyxiation and toxicity: Used properly, the chance of inhaling sufficient quantities of canned air to cause a serious breathing problem is unlikely to occur. In the worst case, high concentrations of gas generated in enclosed, non-ventilated areas can displace ambient air and cause oxygen deficiency or possibly asphyxiation.

Toxicity varies depending on the gas used and the intensity and duration of exposure. For example, nervous system problems have been associated with sustained exposure to high concentrations of some products but not others.

Physical symptoms caused by inhaling canned-air products are most likely due to intentional abuse rather than misuse.

What can I do to protect employees?

Fortunately, you can take a few basic steps to keep your employees safe from the possible hazards associated with canned-air products.

1. Find out **who** uses these products in your workplace and **where** they are used.
2. See if the products are used in enclosed spaces or poorly-ventilated areas. If they are, move use to an open and well-ventilated area.
3. Switch from a flammable to a nonflammable canned-air product.
4. Share this Hazard Alert with employees who use these products and any staff in charge of ordering canned-air products.
5. Make sure users read the label on the can and follow instructions on how to use the product safely.
6. Make MSDS available for more thorough hazard information.
7. Consider whether eye, face, and skin protection is needed.

Other resources

- Find basic health and safety rules and information resources for a variety of workplace hazard topics, including this Hazard Alert, at www.lni.wa.gov/safety

How can I get help from Labor and Industries?

L&I provides consultations, training, and technical assistance at no cost to employers.

Call today to schedule a free, confidential consultation or visit www.SafetyConsultants.LNI.wa.gov for more information. You may also call

1-800-4BE-SAFE or visit a local L&I office and ask for the consultation supervisor.