

# What Should I Know About Phosphine?



**DO NOT handle rat poison made with zinc phosphide unless you are a licensed pest control professional.**



Phosphine is a poisonous gas that can make you sick and can even lead to death. Learn how you might come in contact with phosphine and how you can protect your health.

## What is phosphine?

- Phosphine is a gas formed when water or acid mixes with rat poison that contains zinc phosphide.
- Zinc phosphide is a chemical compound of zinc and phosphorous.
- When rats swallow poison with zinc phosphide, it mixes with stomach acid and turns to phosphine gas.
- Phosphine has no color.
- Phosphine can smell like garlic or fish, but it can be in the air even if you don't smell it.
- Phosphine stays close to the ground when it is in the air.

## How could I come in contact with phosphine?

Some people may come in contact with phosphine or phosphides at work:

- In factories that make some electronics
- In factories that make rat poison
- During pest control for rats

These workers wear special gear to protect themselves.

**Some people** can have contact with phosphine when water or acid mixes with rat poison made with zinc phosphides. You can get sick by swallowing the poison or by breathing in the gas.

You may contact the poison if you

- Put out rat bait with your bare hands
- Breathe in any dust or crumbled, powdery bait
- Get rat bait or powder on your hands, then eat or smoke without washing your hands first

## How can phosphine make me sick?

If you breathe in a small amount of phosphine,

- You can get headaches, nausea, and diarrhea.
- You can get dizzy or drowsy.
- You can get chest tightness or a cough.
- You can have trouble breathing.

If you **breathe in a large amount of phosphine or breathe it for too long**, it can damage your liver and kidneys. It can also cause

- shock,
- convulsions,
- coma,
- a weak heartbeat, or
- low blood pressure.



Swallowing **any kind of rat poison** is dangerous and can make you sick. However, **rat poison made with zinc phosphide** creates **phosphine gas** when it gets to your stomach. If you swallow any kind of rat poison, call poison control **right away at 1-800-222-1222**.

## Why is phosphine more dangerous for children?

Children who come in contact with phosphine get sicker than adults who come in contact with the same amount because

- Children weigh less, so a dose of poison is more concentrated in their bodies.
- Children are more likely to put things in their mouths.
- Children (and pets) may be drawn to rat bait pellets made from zinc phosphide because they are small and may have peanut butter, molasses, or other flavors.

If children or pets swallow pellets, the poison will create phosphine gas when it reaches stomach acid. **Take action right away. Call poison control at 1-800-222-1222.**

## How can I protect myself and my family from contact with phosphine or rat poison made with zinc phosphides?

- Check the ingredients in all poisons and read all directions carefully.
- Do not handle rat poison made with **zinc phosphide** unless you are a **licensed pest control professional**.
- Do not spread rat poison near places where people live or children play.
- Keep children away from grain storage areas. Rat poison is often used in these areas.
- Never use water to clean up or remove rat poison. Water mixes with zinc phosphide in rat poison to create phosphine gas. Breathing phosphine gas can harm your health or take your life.
- **Call your local poison control center at 1 800 222 1222** or a health care professional if you think you have been in contact with phosphine.

## Where can I get more information?

You can get more information about phosphine from

- Your regional poison control center (**1 800 222 1222**)
- Your state, county, or local health or environmental department
- Your doctor
- The Agency for Toxic Substances and Disease Registry (ATSDR) [www.atsdr.cdc.gov](http://www.atsdr.cdc.gov) .

If you contact phosphine or zinc phosphide at work, talk to your employer. You can also contact

- The Occupational Safety and Health Administration ([OSHA, www.osha.gov](http://www.osha.gov))
- The National Institute for Occupational Safety and Health ([NIOSH, www.niosh.gov](http://www.niosh.gov)).

### Contact ATSDR:

Agency for Toxic Substances and Disease Registry  
Division of Toxicology and Human Health Sciences  
1600 Clifton Road NE, Mailstop F-57  
Atlanta, GA 30329-4027  
Phone: 1-800-CDC-INFO · 888-232-6348 (TTY)  
Email: Contact CDC-INFO