

ORGANOPHOSPHATES

What are organophosphates?

There are almost 900 different bug killers (pesticides) that can be used in the United States. A small number (37) belong to a class of insect killers (insecticides) known as organophosphates. The chemicals in this class kill insects by disrupting their brains and nervous systems. Unfortunately, these chemicals also can harm the brains and nervous systems of animals and humans. These chemicals stop a key enzyme in the nervous system called cholinesterase from working, and this can make people ill.

How can someone come into contact with organophosphates?

Poisoning from organophosphates can happen through —

- ingestion, eating or drinking something that has an organophosphate in it;
- inhalation, breathing in air that has an organophosphate in it; or
- dermal contact, having an organophosphate touch your skin or open wound.

Organophosphates as weapons: As a weapon, organophosphates may be spread through the air. It also can be an “agent of opportunity.” This means that someone could explode the vehicle of transportation (truck or train) that is being used to ship the chemical, or destroy tanks that store the chemical. The organophosphates would then be released into the air.

Please note: Just because you come into contact with an organophosphate does not mean you will get sick from it.

What happens if someone gets sick from an organophosphate?

Symptoms of mild organophosphate poisoning may include the following:

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| ▪ runny nose | ▪ sweating | ▪ stomach cramps |
| ▪ chest tightness | ▪ nausea | ▪ muscle twitching |
| ▪ shortness of breath | ▪ vomiting | ▪ confusion |

Severely poisoned people may develop seizures, paralysis or coma; some may die.

How likely are organophosphates to kill someone?

Organophosphates can be very toxic. However, certain classes of this group are more poisonous than others. Overall, the effects of an organophosphate will depend on the type of chemical the person comes into contact with, concentration of exposure, length of time and way the person is exposed. A highly concentrated solution or large amount in the air is more likely to cause severe effects, including death.

What is the treatment for organophosphate poisoning?

- **Prevention of illness after contact:** Leave the area where the chemical was released and move to fresh air.
 - **Remove clothing.**
 - Quickly take off clothing that may have the chemical on it. If possible, any clothing that has to be pulled over the head should be cut off the body instead so the chemical does not get near the eyes, mouth or nose. If helping other people remove their clothing, try to avoid touching any contaminated areas.

(Anthrax continued)

○ **Wash affected areas.**

- As quickly as possible, wash any chemical from the skin with lots of soap and water.
- If the eyes are burning or vision is blurred, rinse your eyes with plain water for 10 to 15 minutes.
- If contact lenses are worn, remove them and put them with the contaminated clothing. Do not put the contacts back in. If eyeglasses are worn, wash them with soap and water. Eyeglasses can be put back on after they are washed.
- If you are wearing jewelry that you can wash with soap and water, wash it and put it back on. If it cannot be washed, put it with the contaminated clothing.

○ **Discard contaminated items.**

- Place the clothing and any other contaminated items inside a plastic bag. Avoid touching contaminated areas of the clothing. If you can't avoid touching contaminated areas, or you aren't sure where the contaminated areas are, wear rubber gloves or use tongs, sticks or similar objects. Anything that touches the contaminated clothing should also be placed in the bag.
- Seal the bag, and then seal that bag inside another plastic bag.
- Call the local county health department right away. (Visit www.idph.state.il.us//local/alpha.htm for a listing of all county health departments in Illinois or check your local phone book.)
- When the local or state health department or emergency personnel arrive, tell them what you did with your clothes. The health department or emergency personnel will arrange for further disposal. Do not handle the plastic bags yourself.

- **Treatment of illness:** If an organophosphate is ingested, the person's stomach may be pumped at a hospital. Other times, the person is given activated charcoal to drink. Activated charcoal is a substance that binds with the poison in the stomach to help the poison pass out of the body naturally.

Hospitals and other health care experts have medicines that reverse the effects of organophosphate poisonings.

Is there a vaccine for organophosphate poisoning?

No, there is no vaccine for organophosphate poisoning.

What should be done if someone comes into contact with an organophosphate?

If you think that you or someone you know may have come into contact with an organophosphate, contact the local county health department right away. (Visit www.idph.state.il.us//local/alpha.htm for a listing of all county health departments in Illinois or check your local phone book.)

If you or someone you know is showing symptoms of organophosphate poisoning, call your health care provider or the Illinois Poison Center right away. The toll-free number for the poison center is 1-800-222-1222.

Where can one get more information about organophosphates?

- U.S. Environmental Protection Agency www.epa.gov
- Illinois Poison Center www.IllinoisPoisonCenter.org