



## Office of Pesticide Programs

### Chlorpyrifos Revised Risk Assessment And Risk Mitigation Measures

On June 8, 2000, EPA released the revised risk assessment and announced an agreement with registrants to phase out/eliminate certain uses of the organophosphate pesticide chlorpyrifos. These actions are in accordance with the organophosphate pilot public participation process. EPA is soliciting public comments on further risk management options for this widely used pesticide. The following questions and answers provide summary information about chlorpyrifos and measures to improve public protection.

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3. Why is EPA taking this action?
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6. My house has just been treated for termites or other insects. What precautions should I take?
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8. Should I have my house tested?
9. What should I do if my house has termites now-are there alternatives to chlorpyrifos?
10. Should I be concerned about chlorpyrifos in my drinking water?
11. What should I do with existing chlorpyrifos products?

#### 1. What action is EPA taking?

- *Cancellation and Phase-Out Agreement* : EPA is requesting public comment on mitigation in view of an agreement reached recently between the Agency and the registrants of chlorpyrifos, to phase out/eliminate certain uses, including termiticide and residential indoor and lawn uses. The agreement also will significantly lower allowable residues (tolerances) on certain crops, including fruits and vegetables regularly eaten by children.
- *Revised Scientific Risk Assessment* : EPA has released its revised risk assessment for chlorpyrifos, opening a public comment period on risk management for the chemical. This is part of the overall public process for the reregistration and tolerance reassessment of the organophosphate pesticides. The assessment is very refined. It is based on more than 200 chemical-specific studies and the most recent residue monitoring data. Many chlorpyrifos-specific studies are available to quantify exposure estimates to people.

## 2. What is chlorpyrifos and how is it used?

Chlorpyrifos is one of the most widely used organophosphate insecticides in the United States. The main uses of chlorpyrifos are:

- agriculture settings
- non-agricultural settings, such as homes, office buildings, schools, and warehouses, etc.
- termiticide treatment

It is currently used on more than 40 different agricultural crops/sites, including: cranberries, strawberries, citrus, apples, figs, pears, nectarines, cherries, peaches, plums, grapes, almonds, pecans, walnuts, nut trees, onions, peppers, kale, broccoli, brussels sprouts, cabbage, cauliflower, collards, cucurbits, asparagus, roots/tubers, corn, tomatoes, lentils, beans, peas, sorghum, tobacco, wheat, alfalfa, peanuts, soybeans, sunflower, cotton, sugar beets, mint, bananas, pastures, woodlands, lots/farmsteads, and cattle eartags.

Chlorpyrifos is also used in homes and other non-agricultural settings, including use as a termiticide, treatment of lawns, ornamentals, treatment inside buildings (indoor crack and crevice), and pet collars.

For additional information on the agreement with registrants, see EPA's document, *Chlorpyrifos Revised Risk Assessment and Agreement with Registrants* (19 KB, [PDF](#)).

## 3. Why is EPA taking this action?

EPA is conducting its review of chlorpyrifos as part of its effort to ensure that all older pesticides meet the tough new safety standards established by the 1996 Food Quality Protection Act. Through this review, EPA has determined that chlorpyrifos, as currently used, does not provide an adequate margin of protection for children. This action adds a greater measure of protection for children by reducing/eliminating the most important sources of exposure.

EPA is reviewing chlorpyrifos through a public participation process and is currently well along in that process. This process began for chlorpyrifos in August 1999 when EPA sent its preliminary human health risk assessment to chlorpyrifos registrants for an "error only comment period." The preliminary risk assessment was released for public comment in October 1999. Over 4000 comments were received.

We are now beginning Phase 5 of the process in which EPA presents its revised risk assessment to the public at a Technical Briefing, and begins the final public comment period to complete a risk management plan.

### *Risk Mitigation Actions:*

#### **Changes to Residential Uses (home, lawn and garden uses as well as uses in schools, parks, daycare centers, and commercial buildings, except limited public health uses):**

- Cancel and phase out nearly all indoor and outdoor residential uses to effectively eliminate the use of chlorpyrifos by homeowners, limiting use to certified, professional, or agricultural applicators. Those uses that pose the most immediate risks to children will be canceled first, including home lawn, indoor crack and crevice treatments, and whole-house post-construction termiticide treatments
- Cancel uses in schools, parks, and other settings where children may be exposed.
- Sale of products for these uses listed above will end 12/31/01.
- Over the next several years, remaining uses, including spot and local termiticide treatments and pre-construction termiticide applications, will be phased out.

#### **Agriculture uses:**

- Use on apples will be restricted to pre-bloom (when no fruit is on the tree), and the tolerance will be lowered.
- The tolerance on grapes will be lowered.
- The tomato use will be canceled, and the tolerance will be revoked.

#### 4. Is it safe to eat foods that have been treated with chlorpyrifos?


Yes. Food treated prior to these use restrictions still provides a considerable margin of safety to consumers. This action simply makes it stronger. The health benefits of a varied diet high in fresh fruits and vegetables outweigh the risk of pesticide residues anticipated on treated fruit. Parents should continue to feed their children a balanced and nutritious diet rich in fruits and vegetables.

#### 5. What effect will this action have on the environment?

According to the United States Geological Survey's 1999 report, *The Quality of Our Nation's Waters*, chlorpyrifos is the third most frequently detected insecticide in streams in urban areas. EPA's action to severely curtail the urban use of this pesticide should significantly improve urban stream quality and reduce risk to fish and other aquatic life.

#### 6. My house has just been treated for termites or other insects. What precautions should I take?

Not all home termite and insect treatments use chlorpyrifos. Chlorpyrifos termiticide use only represents 30-40% of the termiticide market today. Short-term use of these products used according to label directions does not present an imminent risk. However, as an extra precaution, ask your pest control operator if chlorpyrifos was used, and to show you the safety precautions on the product label and the Material Safety Data Sheet for the pesticide. For general and specific information on pesticides, call

the [National Pesticide Telecommunications Network](http://www.nptn.org)  (NPTN) on 1-800-858-7378, Monday through Friday from 6:30 AM to 4:30 PM Pacific Time -- or fax them on (514) 737-0761 -- or send them e-mail at [nptn@ace.orst.edu](mailto:nptn@ace.orst.edu).

If you have additional concerns, consider one or more of the following:

- **Increase the circulation of clean air in your house.** Periodically open windows and doors, and use fans to mix the air. In crawl spaces, clear or add vents and/or install a fan to constantly vent crawl space air to the outside. A radon fan is likely to reduce indoor air levels of chlorpyrifos from a termiticide treatment as well.
- **Seal those areas that directly contact treated soil, using grout, caulk, or sealant.** Fill cracks in basement and ground floors and walls, joints between floors and walls, and openings around pipes, drains, and sumps.
- **Check the condition of ducts in your crawl space or basement.** Use duct tape to seal openings and joints in the ducts in crawl space.

#### *The OP Pilot Public Participation Process*

The organophosphates are a group of related pesticides that affect the functioning of the nervous system. They are among EPA's highest priority pesticides for review under the Food Quality Protection Act.

EPA encourages the public to participate in this review of the OP pesticides. Through a six-phase pilot public participation process, developed in consultation with the Tolerance Reassessment Advisory Committee, the Agency is releasing for review and comment its preliminary scientific risk assessments for each OP.

EPA is exchanging information with stakeholders, including the public, about the OPs, their uses, and risks through technical briefings, stakeholder meetings, and other fora. USDA is coordinating input from growers and other OP pesticide users.

Based on current information from interested stakeholders and the public, EPA is making interim risk management decisions for individual OP pesticides, and will make final decisions through a cumulative OP assessment when the necessary methodology is available.

For more information on this process, see *Public Involvement Opportunities for the Organophosphate Pesticides, April 1999* (EPA 735-F-99-012), or EPA's Website at [www.epa.gov/pesticides/op](http://www.epa.gov/pesticides/op).


## 7. Should I be concerned if my home, school or office was treated with chlorpyrifos?

Again, short-term use of these products used according to label directions does not present an imminent risk. If the building has been treated in the last several years, low levels of the pesticide used may be found. However, these low air-concentration levels generally would not warrant corrective actions beyond those suggested for improving indoor air quality.

If you are still concerned, or if you suspect misapplication of the pesticide, answering the following questions may help you to decide whether to have your home tested:

- Are there obvious, major structural flaws, like large cracks in the foundation or basement near treated soil? Do these cracks leak water?
- Do some residents spend almost all of their time in the basement? For example, do you have occupied bedrooms in the basement?

## 8. Should I have my house tested?

Unless you suspect that the pesticide was misapplied, testing your home may be of little value. However, if you decide to have your house tested, make sure that the results of such testing are reliable by having a qualified laboratory collect and analyze air supplies. Choose a laboratory proficient in both indoor air sampling and pesticide analysis. This type of service is generally available only from commercial laboratories. Costs vary according to the type of testing you desire to have done. To locate a laboratory in your area, call the American Industrial Hygiene Association at (703) 849-8888, or visit their website at: <http://www.aiha.org/index2f.html>. 

When you locate a possible laboratory, ask to see the company's references and statements of experience regarding pesticide sampling and analysis. Also, ask if they have a certified industrial hygienist on staff, or someone who can explain what your test results mean.

## 9. What should I do if my house has termites now-are there alternatives to chlorpyrifos?

Consult with a licensed pest control company in your area. Determine the level and location of infestation and consider all the options. Choose the least hazardous, most effective approach for your situation.

Besides chlorpyrifos, many other pesticides are available for termiticide use, including: permethrin, cypermethrin, imidacloprid, fipronil, bifenthrin, esfenvalerate, deltamethrin, and cyfluthrin. These can be used to prevent termite infestation and to rid structures of existing termite infestations. Cost and efficacy may vary by structure type, soil type, and other environmental factors.

In addition, several bait systems have been introduced in recent years. The pesticides used in these baits include: sulfluramid, hexaflumeron, diflubenzuron, and hydramethylnon. These systems can reduce overall insecticide use and environmental impact as well as increase worker and homeowner safety. Cost can be greater for the initial installation and for yearly monitoring.

Consult with a professional pest control operator, but take the time to investigate your options. Here are some steps to consider in dealing with pest control operators:

- Ask to see the company's license.
- Get inspections and estimates from more than one company.
- Ask for a list of local references.
- Make sure that before you sign the contract you know what it says.
- Get a receipt for the service.
- Ask to see the Material Safety Data Sheet for detailed health and safety information.
- Ask to see the label for the product they intend to use. If the label doesn't have termiticide directions, then

### *Warning Signs of Pesticide Misapplication*

Signs of misapplication may include:

- The presence of persistent chemical odors inside your house (may notice short-term or intermittent odors shortly after application)
- An increase in such odors when the heating or cooling system is operating.
- Evidence of a chemical spill, such as puddles or stains.

Houses with air ducts located in or below the slab, or crawl space, and plenum (an enclosed space in which the air pressure is higher inside than outside), may be particularly vulnerable to misapplication. However, if you have one of these types of houses, this does not necessarily mean that you have a misapplication problem.

it's not intended for this use and should not be applied.

## 10. Should I be concerned about chlorpyrifos in my drinking water?

No. These regulatory actions for residential uses will assure that drinking water exposure will not be a concern in most cases, since a major source of drinking water contamination is residential applications. If you are concerned about your drinking water, contact your local water plant and inquire about the type of treatment process they use. Some, but not all, treatment facilities use activated charcoal filters which remove some chlorpyrifos residues from water because it is easily absorbed. In addition, home drinking water filtration systems are also available.



In highly localized situations where chlorpyrifos termiticide treatments have been made within 100 ft. of a drinking water well, contamination of drinking water can occur. In this case, you may want to contact your state or local water authorities who can assist you in locating a local commercial laboratory to test your well.

States are required to certify water testing laboratories. You may contact your State Certification Office to get a list of certified water testing labs in your area. Again, make sure someone is on staff to explain what your test results mean. You may also, check EPA's Office of Water web site for a directory of State Certification Offices at: <http://www.epa.gov/ogwdw/faq/sco.html>.

## 11. What should I do with existing chlorpyrifos products?

It is legal to purchase and use chlorpyrifos products according to label directions and precautions. Use of these products according to label directions does not pose an imminent hazard. Consumers should know that we took this action to protect children. Consumers who choose to use the product should take special care to always read and follow the label precautions and directions. If consumers choose to discontinue use, they should contact their state or local hazardous waste disposal program or the local solid waste collection service for information on proper disposal.

### *For More Information*

- The chlorpyrifos revised risk assessment documents and other background information about organophosphate pesticides are available on the Internet at [www.epa.gov/pesticides/op/](http://www.epa.gov/pesticides/op/).
- Fact Sheets referenced in this document and the following consumer brochures can be found on EPA's web site [www.epa.gov/pesticides](http://www.epa.gov/pesticides) or by calling the Office of Pesticide Programs Communication Service Branch at (703) 305-5017:
  - [Healthy Lawn Healthy Environment](#) (1.7 MB, PDF)
  - [Pesticides and Food](#)
  - [Citizen's Guide to Pesticides](#) (2.4 MB, PDF)
- The National Pesticide Telecommunications Network  (NPTN) on 1-800-858-7378, Monday through Friday from 6:30 AM to 4:30 PM Pacific Time – or fax them on (514) 737-0761 -- or send them e-mail at [nptn@ace.orst.edu](mailto:nptn@ace.orst.edu).
- Waste Watch Center is a non-profit organization that collects and compiles information on household hazardous waste collection programs, and provides that information to the public on their website: [www.wastewatch.org](http://www.wastewatch.org). 
- Earth's 911 provides community-specific disposal information. Call 1-800-CLEANUP.

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[www.epa.gov/pesticides/op/chlorpyrifos/consumerqs.htm](http://www.epa.gov/pesticides/op/chlorpyrifos/consumerqs.htm)  
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