

# WORKING SAFELY WITH OPs

(Organo-phosphate Insecticides)



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# **Working Safely with OPs**

## **(Organo-phosphate Insecticides)**



## **About the WCB**

The Workers' Compensation Board (WCB) of B.C. is responsible for promoting safety and health in the workplace. To this end, the WCB regulates minimum workplace standards for running a safe and healthy operation.

The first priority of the WCB is to prevent on-the-job injury and disease. WCB officers investigate serious workplace accidents and consult with employers, supervisors, and workers to help them comply with the WCB regulations. The WCB also assigns officers to inspect worksites in B.C. to make sure they comply with the regulations.

If a worker suffers a work-related injury or illness, the WCB provides compensation that may include medical costs, loss of earnings, physical rehabilitation, and pensions. If a worker is killed on the job, counselling and financial help are made available to the victim's family. For more information on requirements or eligibility for WCB coverage, contact the WCB office nearest you.

## Introduction

Insecticides are a type of pesticide used to kill or control insects. When *organo-phosphate insecticides* – commonly called *OPs* – enter the human body, an enzyme called *cholinesterase* can be prevented from controlling normal nerve and muscle function. OPs have a similar effect on insects.

This booklet explains what employers, supervisors, and workers must do to work safely with OPs. It contains information on:

- ◆ How exposure to OPs affects health
- ◆ Signs and symptoms of OP poisoning
- ◆ How OPs enter the body
- ◆ How to find information on the hazards of OPs
- ◆ Personal protective equipment
- ◆ First aid treatment and emergency medical care for workers poisoned by OPs
- ◆ Health protection programs and cholinesterase tests

The *general* information in the booklet on labeling, personal protective equipment, and the duties of employers, supervisors, and workers also applies to other types of insecticides.

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## Where OPs are used

OPs are used:

- ◆ On farms and in orchards to control insects that damage crops
- ◆ On farms and ranches to control pests that infest animals and farm buildings
- ◆ In veterinary products used to control pests that infest livestock and pets
- ◆ In nurseries to control pests that attack greenhouse crops, and bedding and ornamental plants
- ◆ In the forest industry to protect trees and tree seedlings
- ◆ In warehouses, retail stores, schools, office towers, and other buildings to control termites, carpenter ants, and other pests

Some of the most poisonous pesticides used in British Columbia are OPs. Parathion and phosdrin are examples. Even the least toxic OPs can poison you if you don't use them safely. OPs used in British Columbia include:

acephate	diazinon	mevinphos
azinphos-methyl	dichlorvos	naled
chlorfenvinphos	dimethoate	parathion
chlorpyrifos	disulfoton	phosdrin
demeton	malathion	

Most OPs – including malathion, parathion, and demeton – have strong odors that smell like garlic.

## How OPs affect health

Exposure to OPs can result in serious health effects. OPs combine with cholinesterase in the body and prevent it from breaking down *acetylcholine* – a chemical that helps transmit impulses between the gaps of nerve ends and from nerves to muscles. When cholinesterase is blocked, the nerves continue to send messages to muscles.

The effects of repeated exposure to OPs add up because the body replaces cholinesterase slowly. Even repeated absorption of small doses through the skin – over a few hours, a day, or many days – can affect cholinesterase levels. This type of small dose can occur when contaminated clothing isn't handled properly.

### Signs and symptoms of OP poisoning

Workers might not feel all the effects of OP poisoning immediately. There may be a delay of hours, days, or months if exposure continues. If you have been exposed to OPs, pay attention to mild symptoms as they could be mistaken for the flu.

Symptoms of OP poisoning may include:

- ◆ Exhaustion, weakness, confusion
- ◆ Dizziness, blurred and dark vision (everything looks grey)
- ◆ Cold sweating, salivating, watery eyes, stuffy or runny nose
- ◆ Twitching eyelids and tongue
- ◆ Vomiting, cramp-like abdominal pain, diarrhea
- ◆ Difficulty breathing, chest tightness



## How OPs enter the body



### Through the skin

The skin is the most likely way for OPs to enter the body. Exposure through the skin often occurs with spills or splashes during mixing or spraying. OPs can be absorbed not only through skin with cuts or scrapes, but also through intact skin.

Eyes and genital areas absorb pesticides more easily than hands and forearms. That's why eye protection, protective clothing, and good hygiene are important. Good hygiene includes washing your hands:

- ◆ After handling or using OPs
- ◆ Before eating, drinking, smoking, or using the toilet
- ◆ Before going home



### Through the lungs

The risk of inhaling OPs is higher if they tend to remain in the air after application. Inhalation of vapors, fine dusts, and fogs are the main concerns.

The risk of inhaling OPs may be very high in greenhouses, mushroom barns, warehouses, or other enclosed areas where ventilation is poor.



## By swallowing

The most severe poisonings often result when OPs are swallowed. The stomach and intestines absorb pesticides easily.

You could ingest OPs if you eat, drink, or smoke in a contaminated area, or before washing your hands.

Someone died by accidentally swallowing OPs when a container used for mixing OPs was mistaken for a container used for drinking.

## How to find information on hazards

Safety procedures and personal protective equipment must be matched to the hazard level and routes of absorption. To do this, employers and workers need information to be able to assess the risks of working with OPs.

Employers can obtain material safety data sheets (MSDSs) for OP products from most suppliers. The MSDS explains the chemical and physical properties of the product, health hazards, and safety procedures. You should know where MSDSs are kept at your worksite.











Pesticides must be labeled with directions for use and information on ingredients, hazards, safety precautions, and first aid. OPs (and other pesticides) must be registered by the Pest Management Regulatory Agency of Health Canada before they can be sold or used in Canada. The labels must contain the Pest Control Products Act (PCP) registration number.

Usually pesticides are sold as formulations – a mixture of the *active ingredients* (the organo-phosphate in the case of OPs) and other materials called *carriers*.

Carriers make the product easier to store, transport, dilute, or apply. Examples of carriers include fine clay, talc, volcanic ashes, water, oils, solvents, and air and gas propellants.

The information on the OP label takes into account the hazards of the active ingredient (organo-phosphate) and the carrier. The degree of hazard is indicated by the shape of the symbol on the label as shown in the following table.

### Warning Symbols Used on OP Labels

	Danger	Warning	Caution
Poison			
Flammable			
Explosive			
Corrosive			

The shape of the symbol is determined by:

- ◆ The acute oral and dermal LD<sub>50</sub>'s of the formulated product. (The acute LD<sub>50</sub> is the amount given in one dose by mouth or applied to the skin that would cause the death of 50 percent of a group of test animals. Acute Lethal Dose Classifications are listed in the following table.)
- ◆ Whether the product causes long-term (chronic) health effects.
- ◆ Whether a respirator is required when using the product.
- ◆ The health effects on the eyes.
- ◆ The level of petroleum distillates contained in the product.

### Lethal Dose Classifications

Classification	Oral LD <sub>50</sub> (By mouth)	Dermal LD <sub>50</sub> (Applied to the skin)
Very Toxic	0-50 mg/kg*	0-200 mg/kg
Moderately Toxic	over 50-500 mg/kg	over 200-1000 mg/kg
Slightly Toxic	over 500 mg/kg	over 1000 mg/kg

\* milligrams of a substance per kilogram of body weight of the test animal

One of four pictographs inside the symbol on the label indicates whether the product is poisonous, flammable, explosive, or corrosive. (Corrosive materials can burn or destroy tissue.) Flammable, explosive, or corrosive hazards are usually due to the carriers in the formulation.

Always read and make sure you understand the label before using any OP. The label should be kept in good condition so that it's available when needed.

## **Personal protective equipment**

You must wear personal protective equipment to use OPs safely. What you need depends on how toxic the OP is, the type of formulation (solid, liquid, or gas), and the risk of exposure. For example:

- ◆ Mixers and loaders often work with concentrated OPs. Such workers need goggles, gloves, respirators, and protective clothing to guard against splashes, spills, and vapors.
- ◆ Flaggers involved in aerial applications can be exposed to spray drift and should protect all skin areas.

Gloves are made from many materials including natural rubber, neoprene, nitrile rubber, polyethylene, polyvinyl chloride, and polyvinyl alcohol. No one material provides protection against all types of OPs. Check the label for the type of glove recommended for use with the product. If the label doesn't tell you what kind of glove to use, check the MSDS, ask your

supervisor, or contact the supplier. How often you need to replace your gloves depends on the type of glove, thickness, care, and amount of use. Check gloves regularly for holes and worn spots. Don't use a glove with holes.

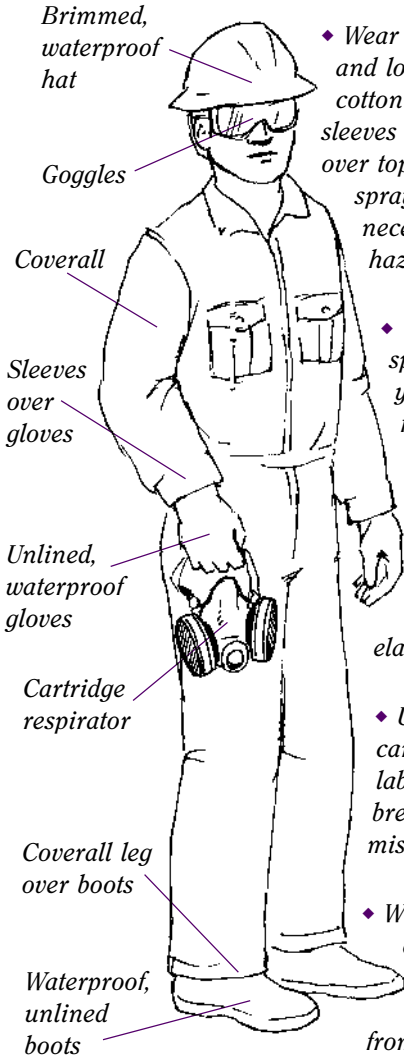
Wear 100-percent cotton coveralls and other clothing unless you wear a rain or spray suit over your clothing. (Rain or spray suits worn during pesticide applications should be waterproof, tear-resistant, and resistant to the solvent used in the OP.) Pesticides pass through polyester – cotton absorbs them. Check the labels on clothing to be sure that it's 100-percent cotton – not a cotton-polyester blend.

Even when you apply a Slightly Toxic OP you should at least wear a long-sleeved shirt, long-legged trousers, socks, waterproof boots, and gloves.

The diagram on the following page shows the minimum personal protective equipment and protective clothing needed when applying OP sprays.

Remember, personal protective equipment has limitations. To ensure your protection, use safe work procedures and follow the personal protective equipment do's and don'ts on pages 10-15.

## Minimum Personal Protective Equipment for Applying OP Sprays



◆ *Wear full-length cotton pants and long-sleeved shirts. Wear cotton coveralls with long sleeves and full-length pants over top of your clothing. A spray suit and hood may be necessary when the spray hazard is high.*

◆ *Wear your coverall or spray suit sleeves outside your gloves to stop OPs from running down your sleeves into your gloves. If you have to work with your arms raised, secure the garment sleeve to the glove – for example, use an elastic band.*

◆ *Use a cartridge or canister respirator if the label says to avoid breathing vapors or spray mists.*

◆ *Wear your pant legs or coveralls over the top of your boots to prevent spills and splashes from running into the boot.*

## Personal protective equipment DOs and DON'Ts



### Coveralls and clothing

- ◆ Wear your pant legs or coveralls over the top of your boots to prevent spills and splashes from running into the boots.
- ◆ Remove your coveralls immediately if they become wet through.
- ◆ Remove your coveralls as soon as you have finished working with OPs for the day. Wear gloves to handle soiled clothing. After you have removed your soiled clothing, shower and wash completely with soap and water, including your hair and fingernails. Put on a complete change of underwear and clean outer clothing.
- ◆ Store contaminated personal protective equipment where others won't come into contact with it until it has been cleaned.
- ◆ Wash coveralls and protective clothing separately from other laundry and after each day's use. Wash in hot water (at least 60° C). Use a strong washing detergent. Wash heavily contaminated clothing twice.
- ◆ Wash your hat, goggles, face shield, and boots in soap and water after each use.
- ◆ Store your clean protective clothing in a separate area from the pesticide storage area.
- ◆ *Don't keep your personal and clean work clothing with contaminated work clothing.*
- ◆ *Don't wear torn, frayed, or contaminated coveralls.*
- ◆ *Don't wash or re-use disposable coveralls.*





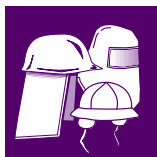
## Boots

- ◆ Wear waterproof, knee-high, unlined boots when you mix, load, or spray OPs.
- ◆ Wash the outside of your boots after each use.
- ◆ *Don't wear leather or fabric boots and shoes because they will absorb the OP and can't be cleaned effectively.*



## Gloves

- ◆ Check your gloves for leaks before use.
- ◆ Wear the type of glove recommended on the OP label. If the label doesn't tell you what type to use, check the MSDS, ask your supervisor, or contact the supplier.
- ◆ Wash your gloves before removing them.
- ◆ Replace your gloves when needed. Check them regularly for holes and worn spots.
- ◆ Wear gloves that extend up the forearm when you mix OPs.
- ◆ *Don't wear a glove with holes or worn spots that could leak.*
- ◆ *Don't handle OPs without gloves.*
- ◆ *Don't use leather, cloth, cloth-lined, or canvas gloves with liquid formulations because your hands could absorb the OPs more quickly if the gloves become soaked.*



## Headgear

- ◆ Wear waterproof headgear such as a rubber or plastic rain hat or a wide brim safety helmet where OPs might splash or sprays may drift at head level.
- ◆ Wear a neck cape that attaches to the back of some helmets if spray might drift onto the back of your neck.
- ◆ Wear a hood that covers your head, neck, and upper shoulders when spray drift is severe.
- ◆ Wash and dry your headgear after each use.
- ◆ *Don't wear baseball caps, felt, straw, or leather hats, or helmets with cloth inner bands.*



## Spray suits

- ◆ Wear a spray suit that is waterproof, tear-resistant, and resistant to the solvent used in the OP, if your coveralls could be splashed or wetted through. Refer to the OP label, MSDS, or ask your supervisor what type to use.
- ◆ Follow the manufacturer's instructions on the care of spray suits.
- ◆ *Don't wear your rain or spray suit outside work – wear it during pesticide applications only.*



## Aprons

- ◆ Wear a liquid-proof apron when pouring or handling concentrated OPs to protect from spills and splashes. Make sure the apron covers your front from your chest to your boots.



## Goggles and face shields

- ◆ Wear chemical splash goggles if there is a chance of getting dust, powder, or spray in your eyes.
- ◆ Wear clear, plastic visors (face shields) that cover your face when you are pouring, mixing, and loading liquid concentrate OPs that may splash from one direction.
- ◆ Wash goggles and face shields with soap and warm water after each use.
- ◆ *Don't use goggles that are only meant to protect you from flying objects – they may have ventilation holes that OPs can flow through.*
- ◆ *Don't use goggles with a headband made of foam or other material that absorbs OPs.*
- ◆ *Don't use a face shield when applying spray mists. Face shields only protect your eyes and face from splashes from one direction.*



## Respirators

- ◆ Wear a respirator if:
  - You could be exposed to harmful levels of OP in the air
    - The OP label says to wear one
    - The OP label says to avoid inhaling dust, vapor, or spray mist
    - There is a danger poison symbol on the OP label
    - You are applying OPs in an enclosed space
- ◆ Wear the right respirator. Ask your supervisor, the supplier, or a safety specialist if you don't know what type you need. Organic vapor cartridges with a prefilter are needed for most OPs. The prefilter protects you from the OP spray mist. Organic vapor cartridges with prefilters – and labeled for use with pesticides – are available from most safety equipment suppliers.
- ◆ Use a respirator that is NIOSH-approved or acceptable to the WCB.
- ◆ Use your respirator properly.
  - Check that the intake and exhaust valves open and close properly.
  - Do a respirator fit test to make sure there aren't any air leaks in the mask's seal with the face. Ask your supervisor, supplier, or a safety specialist to show you how to do a fit test if you don't know what to do.
  - Change the prefilters on cartridge respirators when breathing becomes difficult. As a rough estimate, expect to change your prefilter after

four hours of use and your cartridge after eight hours of use in moderate conditions.

- Date cartridges when you first open the package.
- Use cartridges within the manufacturer's recommended cartridge life span.
- ◆ Maintain and inspect your respirator routinely according to the manufacturer's instructions.
- ◆ Clean your respirator after each use. Wash the face-piece with soap and warm water. Rinse thoroughly to remove all traces of soap. Dry the face-piece with a clean cloth.
- ◆ Store your cartridges or entire respirator in a tightly-closed plastic bag. Otherwise, the life expectancy of the cartridge will be reduced. Put the bag in a clean, dry location.
- ◆ *Don't assume that an enclosed tractor cab fitted with an air-purifying device will protect you from OP vapors. You may have to wear a respirator. Check the manufacturer's instructions to see if the air-purifying device is NIOSH-approved or meets another standard acceptable to the WCB.*
- ◆ *Don't keep your respirator in a pesticide shed or other pesticide storage area.*
- ◆ *Don't use any cartridges of unknown age.*

## What employers and supervisors must do

- ◆ Inform workers about the OPs used at work. Explain their harmful effects and the precautions workers must take to work safely.
- ◆ Ensure that the personal protective equipment necessary to protect workers mixing, loading, or applying OPs is available and is used.
- ◆ Make sure that workers use only properly registered and labeled OPs.
- ◆ Transport and store OPs in a safe manner.
- ◆ Supply workers with the equipment they need to mix, load, or apply OPs safely. Train them how to use the equipment properly.
- ◆ Make sure equipment used to mix, load, or apply OPs is in safe operating condition. Maintain such equipment according to the manufacturer's instructions.
- ◆ Provide enough light so that workers are able to read labels when mixing and loading OPs.
- ◆ Ensure that workers who mix, load, or apply Moderately or Very Toxic OPs for use in fields:
  - Are age 16 or older
  - Have a valid applicator certificateWorkers who clean or maintain equipment used to apply OPs must also meet these requirements.
- ◆ Plan for first aid and emergency care in advance.
- ◆ Immediately notify the WCB Prevention Division of any accident involving an acute exposure to OPs that required treatment by a physician.

- ◆ Make sure that there is a way of checking the well-being of workers mixing, loading, or applying Very Toxic OPs.
- ◆ Make sure a second worker wearing the appropriate equipment is able to rescue a worker using Moderately or Very Toxic OPs in an enclosed space such as a mushroom barn.
- ◆ Provide washing facilities and eyewash equipment at the mixing or loading site and near fields where OPs are applied. If workers live on the premises, provide them with facilities for showering and washing their clothes.
- ◆ Keep the following records of OP applications:
  - Type of crop treated
  - Number of acres or hectares treated
  - OP used
  - Rate of application
  - Location of the treated crop
  - Date and time the application was completed
  - Date that workers were allowed to enter the area
- ◆ Post warning signs at entrances to fields before applying OPs. Secure entrances to greenhouses and other enclosed spaces to prevent unauthorized persons from entering. In the case of Moderately and Very Toxic OPs, the warning signs must include:
  - A skull and crossbones symbol
  - The word warning in a language that can be readily understood by the workers
  - The name of the OP and the date of application
  - The expiry date of the re-entry interval

- Instructions to obtain permission to enter before the expiry date of the re-entry interval.
- ◆ See the following diagram for a sample warning sign for Moderately and Very Toxic OPs.
- ◆ Don't allow workers to enter an area where an OP has been used until it's safe. Re-entry intervals are:
  - 24 hours for a Slightly Toxic OP
  - 48 hours for a Moderately or Very Toxic OP
  - The sum of the 48-hour intervals for each of the Moderately and Very Toxic OPs used in a mixture
  - The interval on the OP label if it's longer than the intervals listed above
- ◆ Make sure a worker entering a field or building before the re-entry interval has expired wears the proper personal protective equipment. If the required time interval hasn't expired, an employer or supervisor must authorize the re-entry.

### Sample Warning Sign





## What workers must do

- ◆ Follow the safety precautions on the OP label.
- ◆ Don't use OPs that aren't clearly labeled.
- ◆ Don't put OPs in unmarked containers. Someone might drink from an unmarked container by mistake.
- ◆ Store OPs in their original containers or in special applicator containers in locked storage rooms.
- ◆ Triple rinse and return empty OP containers to pesticide dealers. (A dealer return program started in 1995.)
- ◆ Wear personal protective equipment. Ask your supervisor, or check the label or MSDS to find out what kind to use.
- ◆ Always wash your face and hands after handling OPs, especially before eating, drinking, smoking, or using the toilet, and before going home.
- ◆ Wash your hat, goggles, face shield, and boots in soap and water when you are finished working with them.
- ◆ Wash your work clothing separately from other washing.
- ◆ Don't enter a field or building until the re-entry time posted on the warning sign has expired.
- ◆ Get first aid for every injury or illness.

## **Emergency medical care and first aid**

*OP poisonings can be life threatening.* If you are an employer, you must ensure that a worker who is suspected of OP poisoning is taken to a health care facility without delay. To fill this responsibility, you must plan for such emergencies.

- ◆ Provide first aid attendants, equipment, supplies, and facilities as required by WBC regulations. This includes providing washing facilities and eyewash equipment that are readily accessible to field workers, and at mixing and loading sites.
- ◆ Make sure that every worker is aware of the location of first aid for the workplace and how to call the first aid attendant.
- ◆ Post signs at the worksite stating the location of first aid and how to call for first aid. The signs must be easy to locate and understand so that workers know how to get first aid and emergency medical care.
- ◆ Post the address and phone number of the nearest hospital emergency department on the vehicle used for applying OPs or where field workers can easily see the information.
- ◆ Ensure that the phone numbers of the provincial Poison Control Centre are at hand. These are:  
1 800 567-8911 (Provincial)  
682- 5050 (Lower Mainland)

- ◆ Tell the closest health care facility that OPs are used on your premises to ensure that the facility is ready for emergencies involving OPs when necessary.
- ◆ Immediately notify the WCB Prevention Division of any accident involving an acute exposure to OPs that required treatment. Call 276-3100 or toll free 1 800 661-2112.



## First aid procedure for OP exposure

First aid attendants must be able to recognize the signs and symptoms of OP poisoning and know how to respond to suspected poisonings. Employers should ensure that a procedure is developed for OP emergencies. Make sure your procedure includes these steps:

- ◆ Remove the worker from exposure; ensure no danger to yourself or the worker.
- ◆ Initiate first aid as required. Protect yourself and others from contamination when handling or transporting the worker.
- ◆ Transport the worker to medical aid as soon as possible. *Be prepared to continue first aid while waiting for transport and on route.*
- ◆ Identify the OP and the PCP Act registration number, if possible. Write down the product name and the PCP Act registration number from the label. Take or send a copy of the MSDS to the hospital.
- ◆ Call the local or provincial Poison Control Centre if you need further advice on treatment.

## Health protection programs

Health protection programs detect early signs and symptoms of occupational disease and adverse health effects in workers exposed to harmful substances. A health protection program should be considered when workers are exposed to OPs on a regular basis. If the WCB considers it necessary, it can require certain employers to set up a health protection program to monitor exposure to pesticides such as OPs.

A health protection program for workers regularly exposed to OPs should include:

- ◆ Training and information on safe methods of use, and routes of absorption
- ◆ Information on the early signs and symptoms of OP poisoning
- ◆ Pesticide exposure histories
- ◆ Pre-exposure (baseline) measurements of workers' cholinesterase levels
- ◆ Regular, periodic blood samples of workers exposed repeatedly to OPs
- ◆ Record keeping and a scheduling system that ensures examinations aren't missed and results are evaluated quickly

## Cholinesterase tests

A blood cholinesterase test is used to monitor the absorption of OPs. The test measures the change in cholinesterase in the blood. The amount decreases as the exposure to OPs increases.

A baseline (non-exposure) cholinesterase level is needed as the normal level of cholinesterase varies greatly from person to person. Some people inherit low levels of cholinesterase. The blood sample should be taken when the worker hasn't been exposed to OPs for 60 days.

It can be difficult to get an accurate baseline level. Certain drugs and medical conditions can also lower cholinesterase levels. It's important to obtain a history of pesticide exposure when obtaining the baseline cholinesterase level. Many household garden products and products used to control ticks, fleas, and cockroaches contain OPs or carbamates (another type of pesticide). Pet flea collars are an example. Some carbamates also lower cholinesterase levels.

Periodic blood samples are taken during the period of high exposure. The frequency of samples depends on factors such as the hours of exposure, the results of previous tests, and signs and symptoms of poisoning.

Levels of cholinesterase are compared with the individual's baseline to see if they have changed significantly. If so, the worker must stop using OPs and the employer must take steps to prevent further exposure from occurring.

## **Worker exposure cards**

Employers who have health protection programs for workers exposed to OPs should consider giving each worker a wallet exposure card. The worker's occupation, baseline cholinesterase level, and the name of the lab where the test was performed should be recorded on the card. Whenever the worker sees a doctor or goes to the hospital due to illness or injury, the worker should show the card to the attending medical staff. The information on the card could help the staff identify early signs or symptoms of OP poisoning that can easily be mistaken for flu. It may also be important if the person needs an anesthetic or drug therapy. The sample card on the following page may be photocopied and distributed to workers.

## **How to obtain cholinesterase monitoring**

Phone Occupational Health, Prevention Division, WCB at 276-3100 or toll free 1 800 661-2112.

A WCB physician will take a pesticide exposure history and discuss appropriate testing.

Specific test results can't be released to an employer who has set up a health protection program without the written, informed consent of the worker. Without consent, the employer can only be given a general description of the test results.

## Sample Wallet Exposure Card

<b>Organo-phosphate Insecticide Exposure Card</b>	
<b>Instructions to Workers:</b> Keep this card in your wallet along with your B.C. Care Card. Whenever you go to your doctor or a hospital due to illness, show the card and make sure those attending you know your occupation.	
Name	Phone Number
Address	
Occupation	
Baseline Cholinesterase Level	
Lab	Phone Number
In Case of Emergency Notify	Phone Number
Address	
Employer	
Contact	Phone Number
Doctor	Phone Number
Address	

## For more information

For answers to your questions about OPs or other pesticides, contact the WCB Prevention Information Line:

(604) 276-3100 or toll free 1 800 661-2112

If you work in agriculture, you can also contact the independent Farm and Ranch Safety and Health Association (FARSHA):

(604) 532-1789

