United States
Environmental Protection
Agency

Region 5
Office of Public Affairs
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(46)

EPA

For Applicators

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FEDERAL REGULATIONS

If you are an applicator or handler of wood preservatives or treated-wood products, you should be aware of the safety precautions that help prevent adverse health effects associated with exposure to the chemicals and the products treated with them.

Under the authority of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the U.S. Environmental Protection Agency (EPA) regulates the use and application of the most widely used wood preservatives: creosote, pentachlorophenol (penta), and inorganic arsenicals.

All three substances are toxic, but they must be toxic in order to be effective. The following guidelines will alert you to the dangers associated with their use and application and to the proper steps for your protection.

WHY TREAT WOOD

Wood is destroyed or weakened by weather, fungi, insects, marine borers, and fire. Treating wood with preservatives significantly increases its useful life by protecting it from attack by these wood-destroying elements.

DESCRIPTION OF PRESERVATIVES

Creosote: a distillate of coal tar; a heavy oily liquid. Creosote improves the weathering characteristics of wood, provides protection from insects and fungi, and promotes insolubility in water. It is used in railroad ties, large timbers, fence posts, poles, and pilings.

Penta (oilborne preservatives): crystalline compound dissolved in light petroleum oil. Products treated with penta include construction lumber and timber, utility poles and crossarms, and fence posts.

Inorganic arsenicals (waterborne preservatives): compounds of arsenic, chromium, copper, zinc, and fluoride. They differ from creosote and penta in that they are water-soluble inorganic substances, as opposed to oily, organic substances. Wood treated with inorganic arsenicals may be used for patios, decks, playground equipment, and interiors.

APPLYING PRESERVATIVES

Because most of the risks associated with the use of wood preservatives come from the application rather than from the handling of the treated wood, EPA has restricted the use of creosote, penta, and inorganic arsenicals. Only certified applicators, or persons under their direct supervision, may purchase or use these preservatives. You must be trained in the proper use and application of these preservatives to be certified. IT IS ILLEGAL TO BUY OR USE THESE PRESERVATIVES UNLESS YOU ARE CERTIFIED TO DO SO.

Before applying the preservatives, refer to instruction labels on the use of treated wood, the protective clothing and equipment you must use, and the disposal requirements for each preservative. This information **must** be provided on the labels of these products.

HARMFUL EFFECTS AND SYMPTOMS

EPA's decision to restrict the use of these preservatives was based on their toxicity. Some of the adverse health effects associated with their use are listed below:

Creosote: This chemical may cause skin cancer in persons regularly exposed to it. Prolonged and repeated exposure may lead to dermatitis (inflammation of the skin). The liquid and vapors can irritate eyes and the respiratory tract.

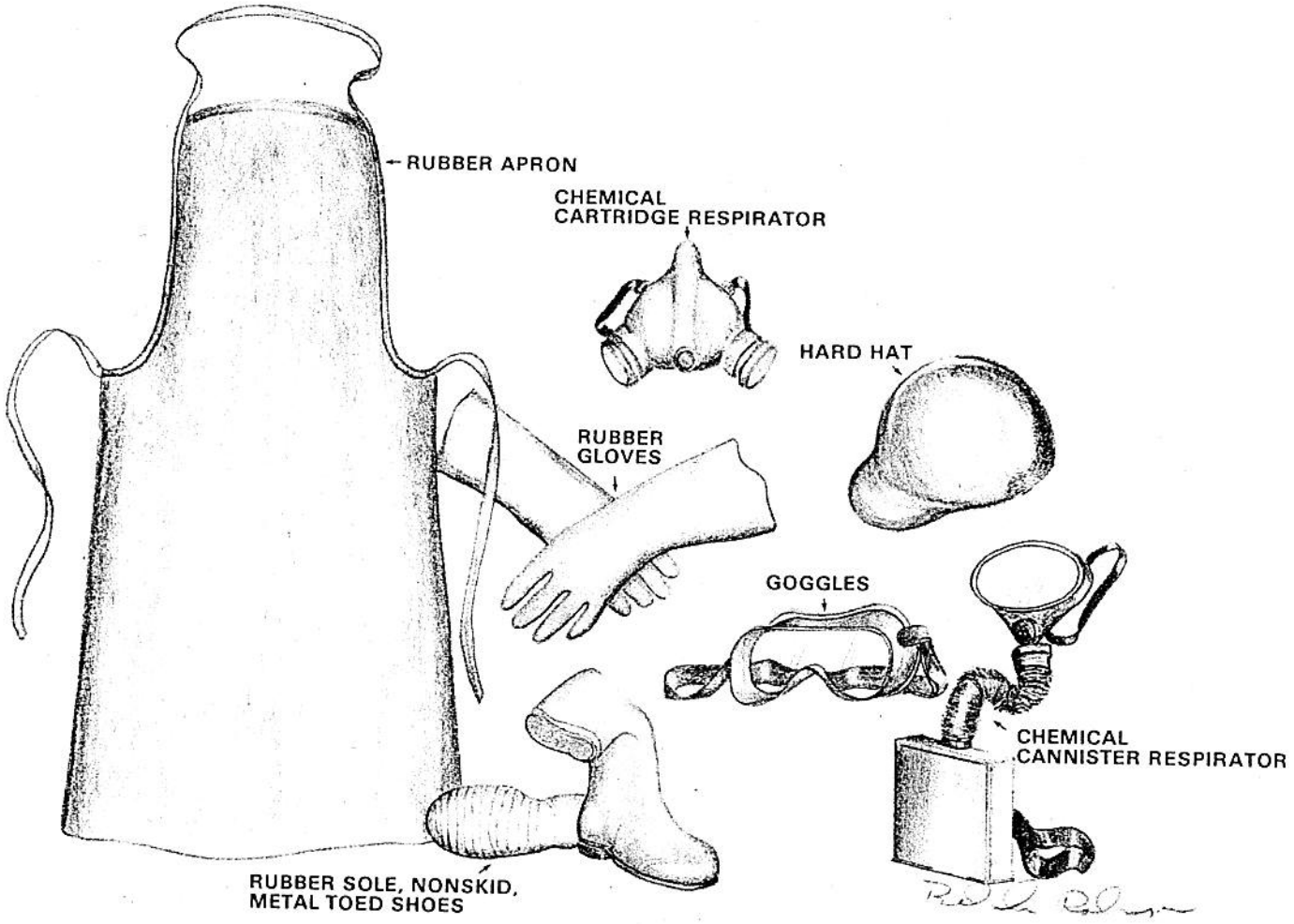
Symptoms of exposure include vomiting, dizziness, headache, convulsions, and respiratory difficulties.

Penta: It has produced defects in the offspring of laboratory animals. Exposure to it during pregnancy should be avoided.

Symptoms of exposure include irritation of eyes, nose and throat, sneezing and coughing, weakness, anorexia, weight loss, sweating, headaches, dizziness, nausea, vomiting, chest pains, fever, and dermatitis.

Inorganic arsenicals: These compounds have been associated with cancer in humans who either drank water contaminated with arsenic or who breathed air containing arsenic.

Symptoms of exposure are weakness, loss of appetite, nausea, vomiting, and diarrhea. Results may be liver damage, loss of hair and fingernails, anemia, and skin disorders.


RUBBER APRON
CHEMICAL
CARTRIDGE RESPIRATOR
HARD HAT
RUBBER
GLOVES
GOGGLES
CHEMICAL
CANNISTER RESPIRATOR
RUBBER SOLE, NONSKID,
METAL TOED SHOES

PROTECTIVE CLOTHING AND EQUIPMENT REQUIRED

For maximum protection during the application and mixing process and in all situations where skin contact is expected, you must wear long-sleeve shirts, long pants, gloves, and an impermeable apron. Gloves should be long enough to protect the wrist and should be worn over the sleeves to prevent the preservatives from running up the arm. ALWAYS WEAR GLOVES WHEN YOU HANDLE FRESHLY TREATED WOOD.

If you enter pressure-treatment cylinders or other related equipment that is contaminated with the wood treatment solution, YOU MUST WEAR PROTECTIVE CLOTHING. This includes overalls, jacket, gloves, and nonskid boots that are impervious to the wood treatment solution.

Protective clothing should be made of vinyl, polyvinyl chloride, neoprene, rubber or polyethylene.

Wear clean clothes daily. If you get a spill on your clothing, change immediately. Do not bring contaminated clothing home with you. Leave any worn-out protective clothing, workshoes, or boots at the treatment plant. Dispose of them in any general landfill, or with the trash. IF YOU MUST WASH PROTECTIVE CLOTHING AT HOME, WASH IT SEPARATELY FROM OTHER LAUNDRY.

SAFETY PRECAUTIONS WHEN SPRAYING PRESERVATIVES

Avoid inhaling vapors. If it cannot be avoided, you must wear a high efficiency half-mask canister or cartridge respirator. You must always wear a respirator when applying the preservatives by a spray method, or entering, cleaning, or repairing vats, tanks, and other related equipment contaminated with the wood treatment solution.

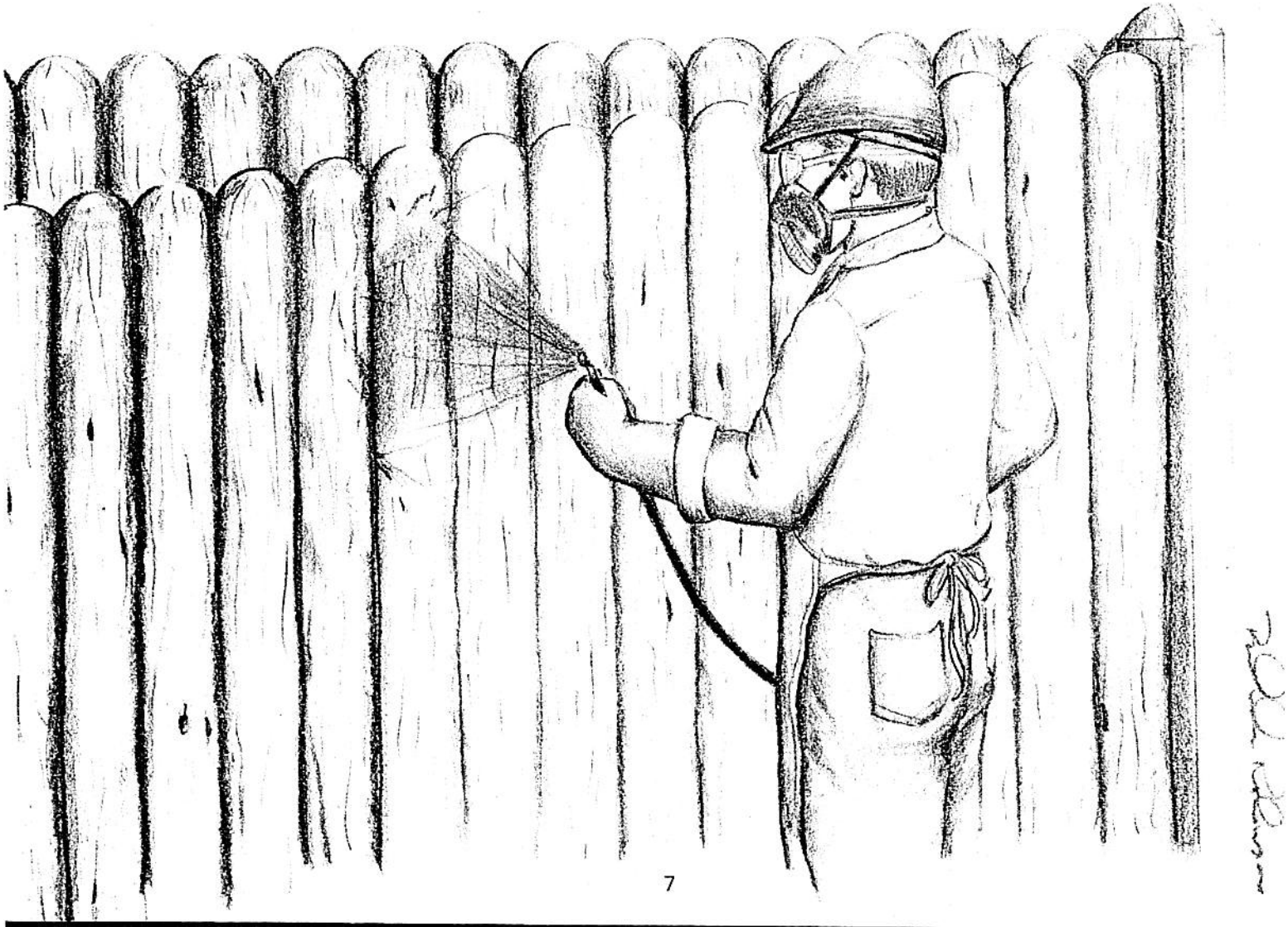
Respirators must fit properly, be well-maintained, and approved for polynuclear aromatics, organic vapors, and acid gases. For a proper fit, it is important to be clean-shaven. A beard or heavy sideburns may prevent a good seal. Also wear goggles, or a facepiece, and head coverings that are impervious to the treatment solution.

Do not overspray. Always check for leaks in the system.

After every use, the goggles and facepiece should be washed with detergent and water, rinsed, dried, and stored in a clean, dry place. Change cartridges and canisters if you have trouble breathing, or if you smell the preservatives. Disposal regulations for used cartridges and canisters are the same as for the preservatives. REFER TO THE MANUFACTURER'S INSTRUCTIONS ON THE USE AND CARE OF THE RESPIRATOR BEFORE YOU USE IT.

SPECIAL PRECAUTIONS FOR PENTA

Through August 31, 1987, EPA regulations require that a closed emptying and mixing system be used, or protective clothing worn, when emptying and mixing prilled or flaked formulations of penta. After that date, a closed system must be used without exception.



A closed system is any containment that prevents the release of chemicals into the surrounding environment, except for the release of tiny amounts during equipment loading and periodic cleanout or maintenance.

When mixing and applying the treatment solution, do not eat or drink, and don't use tobacco products because you may carry toxic amounts of the preservatives to your mouth by hand. Wash thoroughly after skin contact or before using the restroom.

FIRST-AID IN CASE OF ACCIDENTS

The label on each preservative must include directions for first aid in case of an accident. YOU SHOULD BE FAMILIAR WITH THEM BEFORE APPLYING THE PRESERVATIVES. Have the phone number of your local hospital, your doctor, or a poison control center on hand.

Chemicals can be absorbed through the skin, inhaled, or swallowed. Here are some basic first-aid instructions to follow in case of an accident:

For chemicals in your eyes — flush eyes with clean running water immediately for at least 15 minutes. Keep the water pressure low. SEE A DOCTOR AS SOON AS POSSIBLE.

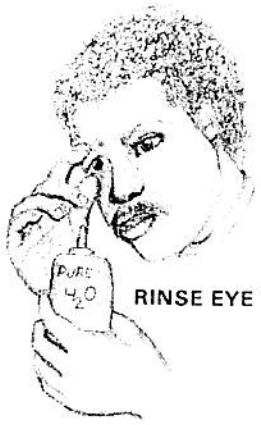
Be careful not to spill the chemicals on your skin or clothing. If you do, remove contaminated clothing immediately and wash the affected areas with mild soap and water. Soap, clean water, or a waterless hand cleaner should be readily available. IF SKIN BECOMES INFLAMED, SEE A DOCTOR.

If you swallow a chemical, get medical attention at once. Drink large quantities of water and induce vomiting. DO NOT MAKE AN UNCONSCIOUS PERSON VOMIT.

Anyone overcome by fumes must be moved to fresh air. If the victim is not breathing, apply artificial respiration. CALL FOR EMERGENCY MEDICAL ASSISTANCE IMMEDIATELY.

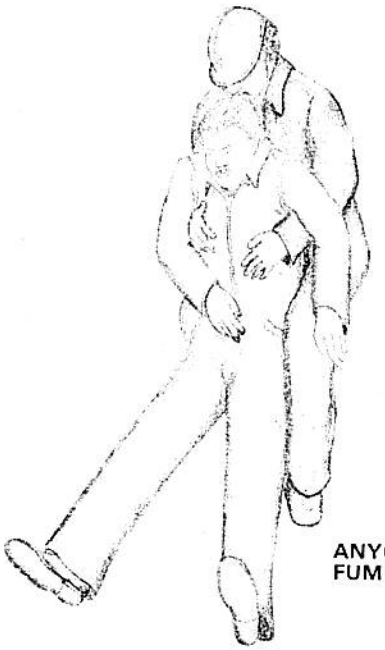
SAFE STORAGE

The chemicals should be stored in a dry, cool, well-ventilated area. This area should be made of fire-resistant material and have a cement floor, an exhaust fan for good ventilation, and a lock on the door. Containers should be checked often for leaks or breaks. If a leak develops, clean up the spill immediately.



RINSE EYE THOROUGHLY

WASH AFFECTED AREA
WITH SOAP AND WATER



ANYONE OVERCOME BY
FUMES, MOVE TO FRESH AIR

IF INGESTED,
DRINK PLENTY OF WATER

DISPOSAL REQUIREMENTS

Improper disposal of pesticides (including certain preservatives) is a violation of Federal law. Always refer to the label for disposal instructions. If you cannot dispose of these wastes according to the label, contact your State pesticides office (listed on last page) or your Regional EPA Waste Management Office for guidance.

Rinse and drain all chemical containers before disposal. Do not reuse empty containers. Bury containers in an approved landfill or dispose of them according to approved methods. REFER TO THE LABEL FOR INSTRUCTIONS ON THE SAFE DISPOSAL OF CONTAINERS.

Treated wood from residential use can be disposed of by burial or in ordinary trash cans. Do not burn it in open fires or in stoves, fireplaces, or residential boilers because toxic chemicals may be produced as part of the smoke and ashes.

Treated wood from commercial or industrial use, such as in construction sites, may be disposed of only in commercial-industrial incinerators or boilers rated at a minimum of 20 million BTU (British thermal unit) per hour, or its equivalent, in accordance with State and Federal regulations.

LIMITATIONS ON USING TREATED WOOD

EPA regulations restrict uses of treated wood. You should be aware of these restrictions and the proper precautionary measures. Treated wood should be used only where it is necessary to protect wood from insect attack and decay. Below are restrictions that apply to wood treated with creosote, penta, and inorganic arsenicals.

- Wood treated with inorganic arsenicals may be used inside homes as long as all sawdust and other construction debris are cleaned up and disposed of.
- Wood treated with creosote and penta should not be used inside homes because of toxic fumes.
- Wood treated with creosote and penta should not be used inside farm buildings where domestic animals or livestock **may** bite or lick the wood.
- Wood treated with inorganic arsenicals does not require sealers. Even frequent contact is safe because absorption through the skin is negligible.

Two coats of appropriate sealer must be applied on:

- wood treated with creosote or penta if it will frequently come into contact with bare skin, such as in outdoor furniture;
- treated wood used for support structures inside industrial buildings;
- treated wood that has been used in support structures where it is **unlikely** that the domestic animals or livestock will bite or lick the wood; and
- wood treated with penta and used on outdoor surfaces of doorframes, windows, and patio frames.

Urethane, epoxy, and shellac are acceptable sealers for all creosote-and penta-treated wood.

For wood-block flooring treated with creosote, coal-tar pitch and coal-tar pitch emulsion are effective sealers.

Do not use treated wood:

- for farrowing or brooding facilities;
- where the preservative may become a component of food or animal feed, such as in silos;
- for cutting-boards or countertops;
- for parts of beehives that may come into contact with the honey;
- where it may come into direct or indirect contact with public drinking water, or drinking water for domestic animals or livestock, except for incidental contact such as with docks and bridges; and
- on logs intended for building log homes.

Only treated wood that is visibly clean and free of surface residue should be used for patios, decks, and walkways.

OTHER SAFETY PRECAUTIONS

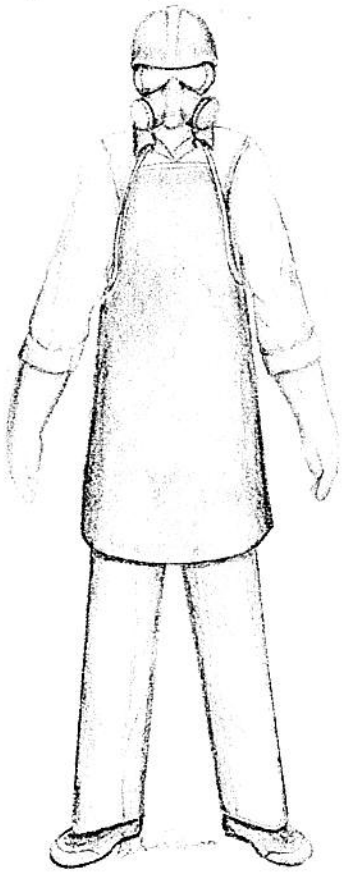
Cut wood to size **before** treating it with creosote and penta.

Wear a dust mask to avoid inhaling sawdust when sawing and machining treated wood.

Wear goggles to protect your eyes from flying particles.

Whenever possible, work outdoors to avoid indoor accumulation of sawdust.

Wash exposed body areas thoroughly after working with the wood and before eating or drinking, or before using tobacco products.



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APPLICATOR TRAINING

If you wish to become a certified applicator, contact your State agency for information about the certification and training program.

Below are the contacts in the EPA Region 5 States:

Illinois

Illinois Dept. of Public Health
Division of Sanitation
535 West Jefferson St.
Springfield, IL 62671

Contact: Harvey Dominick
(217) 782-4674

Indiana

Office of the Indiana State Chemist
Dept. of Biochemistry
Purdue University
West Lafayette, IN 47907

Contact: L.O. Nelson
(317) 494-1587

Michigan

Michigan Dept. of Agriculture
Plant Industry Division
P.O. Box 30017
Lansing, MI 48909

Contact: John Dreves
(517). 373-1087

Minnesota

Minnesota Dept. of Agriculture
Agronomy Services Division
90 West Plato Blvd.
St. Paul, MN 55107

Contact: Michael Fresvik
(612) 296-8547

Ohio

Ohio Dept. of Agriculture
Pesticides Regulation
Reynoldsburg, OH 43068

Contact: Oren Spilker
(614) 866-6361

Wisconsin

Wisconsin Dept. of Agriculture,
Trade and Consumer Protection
Plant Industry Division
P.O. Box 8911
Madison, WI 53708

Contact: Edward Bergman
(608) 266-0197

If you wish more information on wood preservatives, contact EPA's Regional Pesticides Office in Chicago at (312) 353-2192.