

LEAD

Contents

How Lead Has Commonly Been Used	4
How Lead Has Commonly Been Used	4
Definition	5
Lead Health Effects	6
Finding Lead Hazards in Your Home	6
Finding Lead Hazards In Your Home	6
How Can I Reduce or Get Rid of the Lead Based Paint Hazards in My Home?.....	8
Routine Cleaning and Maintenance.....	9
How Do I Prevent Lead Dust?	9
What Are the Best Ways to Clean Dust?.....	10
Cleaning Uncarpeted Floors.....	10
Cleaning Carpets and Rugs.....	10
Cleaning Walls.....	10
Cleaning Other Painted Surfaces	11
Dusting	11
How Can I Get My Home Tested?	11
What Will I Get from the Testing?	12
What Are Home Test Kits?	12
Does the Federal Government Recommend Home Test Kits?	12
What About Testing for Lead in Water?	12
How to Work Safely	13
Remodeling and Renovation.....	13
Replacing or Working on Windows.....	14
Performing Duct and Plumbing Work.....	14
Duct Work.....	14
Plumbing	15
Performing Minor Repairs.....	15
Interim Controls	16
Safe Management of Lead Based Paint in Your Home	16
ADVANTAGES of Interim Controls	16

DISADVANTAGES of Interim Controls	16
When Interim Controls Will NOT Work	16
Removing Dust	17
Major Dust Collectors and Potential Dust Traps.....	17
Removing Lead Dust Inside Your Home.....	18
Removing Lead Dust from the Exterior of Your Home	19
Repainting Lead Painted Surfaces.....	19
Recommendations for Repainting a Lead Painted Surface.....	19
Repairing Friction and Impact Surfaces	20
How to Repair a Friction or Impact Surface?	20
Preventing Access to Soil Hazards	21
Abatement	21
Lead Abatement: What It Is, Who Should Do It.....	21
Tips for Finding and Selecting an Abatement Contractor.....	21
Replacement	22
Advantages of Replacement.	22
Disadvantages of Replacement.....	22
Enclosure.....	22
Advantages of Enclosure.....	23
Disadvantages of Enclosure	23
Encapsulation.....	23
Advantages of Encapsulation.....	23
Disadvantages of Encapsulation	23
Paint Removal	24
Advantages of Off Site Paint Removal	24
Disadvantages of Off Site Paint Removal.....	24
Exterior Paint Removal	24
Advantages of Vacuum or Water Blasting	24
Help from a Risk Assessor or a Contractor.....	25
Cleaning Up Lead Waste	25
Daily Cleanup	25
Personal Cleanup	26

Final Cleanup.....	26
Clearance Examination	26
Hazardous Waste Disposal.....	27
Abatement Guidelines for Your Contractor.....	28
Method Where It Is Best Used.....	28
Replacement.....	29
Replacing Doors, Windows, and Woodwork	29
Encapsulation.....	29
Enclosure.....	29
Preparing the Area.....	30
Enclosing a Wall	30
Enclosing a Ceiling.....	30
Paint Removal	30
Off Site Paint Removal	31
On Site Paint Removal.....	31
Vacuum Blasting, Water Blasting, and Enclosure for Exterior Paint.....	31
Glossary.....	32
Resources	37
Contacts	38
EPA Regional Lead Contacts.....	47

Download a PDF version of the content in this article:

[EPA's Lead in Your Home: A Parent's Reference Guide](#)

[EPA's Lead Poisoning and Your Children](#)

[EPA's Protect Your Family From Lead in Your Home](#)

[EPA's Testing Your Home for Lead in Paint, Dust, and Soil](#)

[EPA's Lead and a Healthy Diet](#)

[EPA's Reducing Lead when Remodeling](#)

- Lead exposure can be dangerous, especially to children ages 6 and younger.
- Exposure to lead contaminated dust, not lead based paint is the most common way to get lead poisoning.
- Lead poisoning can be prevented.
- Lead is highly toxic. Exposure to it can be dangerous, especially for children who are 6 or younger. But lead is also stable and easy to work with, so it has been used for many purposes. even in our homes. It is important that every parent know where lead can be found, and how to control it. It is also important to know what to do if you or a member of your family is exposed to lead.

How Lead Has Commonly Been Used

Lead is highly toxic. Exposure to it can be dangerous, especially for children who are 6 or younger. But lead is also stable and easy to work with, so it has been used for many purposes. even in our homes. It is important that every parent know where lead can be found, and how to control it. It is also important to know what to do if you or a member of your family is exposed to lead.

How Lead Has Commonly Been Used

Lead is a metal that has been mined for thousands of years. In the past, it was used to make common items found in or near homes. These items include paint, gasoline, water pipes, and food cans.

Lead in paint. Manufacturers used to put lead pigments in paint because the pigments make the paint last longer and cling to surfaces better. But problems can occur later. Paint that is disturbed or that is breaking down with age can contaminate dust. Lead based paint is no longer used in homes, on children's toys, or on household furniture. In 1978, the Consumer Product

Safety Commission (CPSC) banned its sale for use in residences. That same year the CPSC also made it illegal to paint children's toys and household furniture with lead based paint.

Lead in gasoline. Oil companies used to add lead to gasoline to stop engine knocking in automobiles, but dangerous lead particles escaped into the air through auto exhaust systems. In 1978, the U.S. Environmental Protection Agency (EPA) reduced the amount of lead allowed in gasoline.

Lead in household pipes. Lead used in fixtures, pipes, or pipe soldering can leach into water that flows through the pipes. In 1986, and again in 1988, Congress changed the Safe Drinking Water Act to restrict the use of lead in pipes, solder, and other components used in public water systems and residential and nonresidential plumbing. Unfortunately, lead may still be found in pipes today.

Lead in food cans. The lead solder used to seal food cans can mix with the food in the can. The United States banned the use of lead solder in cans in 1995, but it is still used in many other countries. Lead solder may be found in cans imported to the United States.

Lead has long been recognized as a harmful environmental pollutant. In late 1991, the Secretary of the Department of Health and Human Services called lead the "number one environmental threat to the health of children in the United States." There are many ways in which humans are exposed to lead: through air, drinking water, food, contaminated soil, deteriorating paint, and dust. Airborne lead enters the body when an individual breathes or swallows lead particles or dust once it has settled. Before it was known how harmful lead could be, it was used in paint, gasoline, water pipes, and many other products.

Old lead based paint is the most significant source of lead exposure in the U.S. today. Harmful exposures to lead can be created when lead based paint is improperly removed from surfaces by dry scraping, sanding, or open flame burning. High concentrations of airborne lead particles in homes can also result from lead dust from outdoor sources, including contaminated soil tracked inside, and use of lead in certain indoor activities such as soldering and stained glass making.

Definition

[From "The Condensed Chemical Dictionary, 9th ed., Van Nostrand Reinhold Company, New York, 1977.] Metallic element of atomic number 82, Group IVA of the periodic table. Atomic weight 207.2; valences 2, 4; 4 stable isotopes. The isotopes are the end products of the three series of natural radioactive elements uranium (206), thorium (208), and actinium (207).

Properties — Heavy, ductile, soft gray solid. Sp. gr. 11.35; m.p. 327.4oC; b.p. 1755oC; soluble in dilute nitric acid; insoluble in water but dissolves slowly in water containing a weak acid; resists corrosion; relatively impenetrable to radiation. Poor electrical conductor; good sound and vibration absorber. Non combustible.

Sources of Lead: Lead based paint, contaminated soil, dust, and drinking water.

Lead Health Effects

Lead affects practically all systems within the body. Lead at high levels (lead levels at or above 80 micrograms per deciliter of blood) can cause convulsions, coma, and even death. Lower levels of lead can cause adverse health effects on the central nervous system, kidney, and blood cells. Blood lead levels as low as 10 micrograms per deciliter can impair mental and physical development. EPA's Integrated Risk Information System profile on Lead and Lead Compounds epa.gov/iris/subst/0277.htm

The effects of lead exposure on fetuses and young children can be severe. They include delays in physical and mental development, lower IQ levels, shortened attention spans, and increased behavioral problems. Fetuses, infants, and children are more vulnerable to lead exposure than adults since lead is more easily absorbed into growing bodies, and the tissues of small children are more sensitive to the damaging effects of lead. Children may have higher exposures since they are more likely to get lead dust on their hands and then put their fingers or other lead contaminated objects into their mouths.

Get your child tested for lead exposure. To find out where to do this, call your doctor or local health clinic. For more information on health effects, get a copy of the Centers for Disease Control's (CDC www.cdc.gov), "[Preventing Lead Poisoning in Young Children](#)."

Finding Lead Hazards in Your Home

Changes in the law have greatly reduced the amount of lead in our homes and in the air today. But it is important to remember that lead does not break down over time. Therefore, you should know how to identify sources of lead in your home and how to keep your family safe.

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Finding Lead Hazards In Your Home

The most common household lead hazards are lead based paint, lead dust, and contaminated soil.

Lead based paint:

Lead based paint is a hazard if it is peeling, chipping, chalking, or cracking. Even lead based paint that appears to be undisturbed can be a problem if it is on surfaces that children chew or that get a lot of wear and tear. These areas include: windows and window sills; doors and door frames; stairs, railings and banisters, porches, and fences. Even surfaces that have been covered with new paint or another covering can expose older lead based paint layers when they become cracked or chipped. The older your home is, the more likely it is to contain lead based paint.

Dust:

Dust can become contaminated with lead when lead based paint is dry scraped or sanded. Dust can also become contaminated when painted surfaces bump or rub together. Lead chips and dust can gather on surfaces and objects that people touch or that children put into their mouths.

Soil:

Soil can become contaminated when exterior lead based paint from houses, buildings, or other structures flake or peels and gets into the soil. Soil near roadways may also be contaminated from past use of leaded gasoline in cars. Avoid these areas when planting vegetable gardens.

Older plumbing fixtures:

Older plumbing fixtures, such as faucets, lead pipes, and pipes connected with lead solder, can contaminate drinking water. Older water well pumps made with brass or bronze parts that contain lead can also contaminate drinking water. The amount of lead in your water depends on the types and amounts of minerals in the water, how long the water stays in the pipes, the amount of wear in the pipes, the water's acidity, and its temperature. Lead can leach into water at any temperature, but the amount of lead can be much greater when the water is hot or warm, so don't drink or cook with water from the "hot" faucet. Carbon, sand, and cartridge filters do not remove lead from water, although some filters are "certified" for lead removal. Boiling your water will not get rid of the lead.

Vinyl mini blinds:

Some imported, non glossy, vinyl mini blinds can be a lead hazard, especially to young children. Sunlight and heat can break down the blinds and may release lead contaminated dust. Children who touch the mini blinds and put their fingers in their mouths may ingest the lead particles. It's best to remove these blinds if you have children who are 6 or younger. If you purchase new mini blinds, look for products with labels that say "*new formulation*," "*nonleaded formula*," "*no lead added*," or "*New! Nonleaded vinyl formulation*."

Painted toys and household furniture:

Painted toys and household furniture made before 1978 may be painted with lead based paint. Do not let children chew on any older, painted toys or furniture, such as cribs or playpens.

Lead glazed ceramic ware, pottery, and leaded crystal:

Food and liquids can absorb lead and become contaminated when stored in these items. Lead may be present in some glassware and in glazes found on ceramic wares.

Exposed to lead at your job site:

If you are exposed to lead at your job site, you could bring lead dust home on your clothes, shoes, hair, or skin. Lead smelters or other industries can release lead into the air.

Hobbies:

Hobbies such as making pottery, working with stained glass, or refinishing furniture can expose you to lead hazards. Try not to work on these hobbies in your home.

Folk remedies:

Folk remedies that contain lead can cause lead poisoning. Two examples are "*Greta*" and "*Azarcon*," which are often used in the Hispanic and Asian communities to treat an upset stomach. Another is "*Pay loo ah*," which is a red powder used to treat a rash or fever. Putting lead into a human body is dangerous, and it does not cure such ailments.

How Can I Reduce or Get Rid of the Lead Based Paint Hazards in My Home?

In addition to the day to day steps outlined in the previous section, you can prevent lead poisoning by using either interim controls, abatement, or both.

- **Interim controls.** Interim controls are treatments that **temporarily** reduce the risk of exposure to lead hazards. For example, you can repair damaged painted surfaces or plant grass to cover soil.
- **Abatement.** Abatement is the permanent elimination of lead based paint hazards. The four methods below are for abatement of structural components in housing.
 - **Replacement.** The removal of lead painted items — such as windows, doors, and trim — and the installation of new, lead free items.
 - **Enclosure.** The covering of lead painted surfaces with a stiff material — such as paneling or wallboard — to prevent lead dust from getting into the environment. Enclosure also prevents contact with the lead based paint.
 - **Encapsulation.** The covering of lead painted surfaces with a special liquid coating. Once it dries, the coating prevents contact with the lead based paint and the spread of lead dust.
 - **Paint removal.** The removal of paint done either in your home or at a paint stripping facility. Methods often used include wet scraping, wet planing, or chemical stripping.

You can perform many simple interim controls yourself, but — because performing an abatement can be dangerous — only a certified contractor should perform an abatement. Call your state lead contact or the HUD Lead Listing at (888) LEAD LIST for a list of certified contractors in your area.

Q. What is the difference between interim controls and abatement?

A. Interim controls temporarily reduce lead hazards. They may solve the problem, at least until the condition of the affected area worsens. If that happens, the hazard needs to be reevaluated. Abatement permanently eliminates the lead hazard.

Routine Cleaning and Maintenance

It is very important to care for the lead painted surfaces in your home. Lead based paint in good condition is usually not harmful.

What Causes Lead Dust?

Certain household activities are likely to disturb lead painted surfaces and contaminate dust, including repeatedly opening and closing windows and bumping furniture or other objects against painted walls. Dust can also become contaminated during many home improvement.

These activities include:

- Nailing, drilling, or screwing into lead painted surfaces.
- Prying painted surfaces apart.
- Cutting, sawing, or chopping lead painted surfaces.
- Tearing out walls.
- Making holes in walls or ceilings to access pipes or install electrical outlets.
- Scraping, sanding, brushing, or using a heat gun on painted surfaces before repainting. Heat guns should not be warmed above 1100° F. If heated above this temperature, lead based paint can give off toxic fumes.

Although the lead based paint in your home may be in good condition, if it is on a surface that is often rubbed, bumped, or chewed, it can easily peel and flake and can be harmful.

How Do I Prevent Lead Dust?

Follow three important rules when dealing with lead based paint:

- Do not dry scrape or sand most lead painted surfaces. Instead, wet scrape areas by misting the surface with water before and during scraping. Limit dry scraping to areas that cannot get wet, such as those around electrical outlets.
- Try to control dust during work on lead painted surfaces by using the equipment and following the precautions listed.
- Use a wet sponge or a mister to dampen and wipe down surfaces when cleaning. Never dry sweep or dust lead painted surfaces.

What Are the Best Ways to Clean Dust?

There are ways to clean your home that will help you reduce or prevent your family's exposure to lead dust. Here are some tips on how to clean and how not to clean your home. It's best to follow these steps weekly.

Cleaning Uncarpeted Floors

Do use:

Damp or wet mopping.

Standard sponge or string type mops and an all purpose cleaner or a cleaner made specifically for lead.

Standard vacuum cleaners if no visible dust or debris from chipping or flaking paint is present.

Don't use:

Mops with a scrubber strip attached.

Powered buffing or polishing machines.

Vacuums with beater bars that may wear away the painted surface.

Cleaning Carpets and Rugs

Do use:

Wet scrubbing methods to remove stains.

Steam cleaning methods.

Standard vacuum cleaners if no visible dust or debris from chipping or flaking paint is present.

Don't use:

Dry sweeping of surface dust and debris.

Shaking or beating of carpets and rugs.

Cleaning Walls

Do use:

Soft cloths to wet wipe walls.

All purpose cleaner or a cleaner made specifically for lead.

Don't use:

Steel wool, scouring pads, and abrasive cleaners.

Solvent cleaners that may dissolve paint.

Cleaning Other Painted Surfaces

Do use:

Soft cloths.

All purpose cleaner or a cleaner made specifically for lead.

Don't use:

Abrasive cleaners and scouring pads.

Solvent cleaners that may dissolve the paint.

Excessive rubbing of spots to remove them.

Dusting

Do use:

Disposable, nonabrasive dusting cloths or dusters.

How Can I Get My Home Tested?

To test your home for lead, have either a risk assessment or a lead inspection done.

A risk assessment. A risk assessor tells you if your home contains sources of lead exposure such as peeling paint or lead dust. The risk assessor will give you a report that identifies lead hazards and ways to control them. If you suspect you have a lead problem, a risk assessment is usually the most appropriate way to test for lead hazards.

An inspection. A lead inspector reveals the lead content of every painted surface in your home. An inspection will not tell you whether the paint is a hazard or how you should deal with it. The purpose of the inspection is to test each type of painted surface in your home and answer two questions:

1. Is lead based paint present?
2. If lead based paint is present, where is it located?

It is important to know where lead based paint is in your home so that, if disturbed by you or your contractor, additional lead hazards aren't created. An inspection is usually recommended if you plan to remodel, renovate, or disturb paint. It is also advised if you plan to abate the lead based paint in your home.

Whether you hire an inspector or a risk assessor to do your testing, check his or her background. Those who have worked with public housing authorities and childhood lead poisoning prevention programs are usually well qualified. Beginning in August 1999, Federal law will require risk assessors and inspectors to be certified. For a list of certified lead inspectors and risk assessors in your area, call your state lead contact.

National Lead Service Providers. Listing System Sponsored by the U.S. Department of Housing and Urban Development (HUD), the Lead Listing is a list of service providers who have received training from a state accredited training provider. Get a list by calling (888) LEAD.LIST or by visiting the Lead Listing Internet site at www.leadlisting.org.

National Lead Information Center's Clearinghouse Maintained by EPA, the clearinghouse sends testing and laboratory information to those who request it. The phone number is (800) 424.LEAD.

What Will I Get from the Testing?

Risk assessment: The risk assessor will identify lead based paint hazards and suggest ways to reduce or control the hazards. For example, a risk assessor may suggest that you clean or dust more often; repair deteriorated lead painted surfaces, or plant grass in areas with bare soil. The assessor may also suggest that you replace old windows, recover old floors, or remove soil. The risk assessor's report will show you what methods you can use to control hazards. It will also list an estimated cost of other actions you may take to prevent or control hazards.

Lead inspection: The inspector will give you a report that tells you whether your home contains lead based paint and where it is found. The report will not tell you whether it is a hazard or how it should be treated.

What Are Home Test Kits?

Home test kits use chemicals to detect lead in paint, soil, and dust. Some kits can test water, dishes, glasses, and ceramics. A reaction occurs when the chemicals in the kit are exposed to lead.

Does the Federal Government Recommend Home Test Kits?

No. The Federal Government does not currently recommend home test kits to detect lead in paint, dust, or soil. Studies show the kits are not reliable enough to tell the difference between high and low levels of lead.

Do not rely on home test kits. Studies show that they are not always accurate.

What About Testing for Lead in Water?

If you think your water might contain lead, call either the EPA Safe Drinking Water Hotline at (800) 426.4791 or your local health department.

How to Work Safely

Whether you are renovating, remodeling, or performing interim controls, you must follow these safeguards to prevent lead dust from spreading throughout your home:

Construct an airlock at the entry to the work area. The airlock consists of two sheets of the thick plastic. One sheet is completely taped along all four edges. The tape must extend all the way around the top, two sides, and the floor. This plastic sheet is then cut down the middle. The second sheet is only taped along the top and acts as a flap covering the slit in the first sheet of plastic. If two entryways exist, one should be completely sealed in plastic. As an alternative, the doorway can be taped closed on all sides.

Remove all furniture, area rugs, curtains, food, clothing, and other household items until cleanup is complete. Items that cannot be removed from the work area should be tightly wrapped with the plastic sheeting and sealed with duct tape until all work and cleanup is complete.

Turn off forced air heating and air conditioning systems when remodeling, renovating, or performing interim controls. Then cover the heating and air conditioning vents with the plastic sheeting. Tape the sheeting in place with duct tape. Windows should be kept closed unless volatile chemicals will be used.

Cover openings, such as gaps around pipes and between floorboards, with plastic or duct tape to prevent lead dust from sifting down to lower floors and rising to upper floors.

Cover exposed surfaces that you cannot remove with the plastic sheeting. Examples include floors, carpeting, counter tops, and shelves.

Tape around the door seals of refrigerators to prevent dust from getting into the food inside.

Spray water on lead painted surfaces to keep dust from spreading.

Remodeling and Renovation

Lead based paint is most often found around windows, in kitchens, and in bathrooms.

Home projects done on lead painted areas can create harmful lead dust.

If you think your home has lead based paint, hire a professional to test for lead before beginning work.

If your home has lead hazards, do not perform any renovations or remodeling yourself. Hire a trained contractor who knows how to work safely with lead.

Remember this important rule: Before beginning work, hire a professional to test affected areas and see if lead hazards exist. Call your state lead contact or the HUD Lead Listing at (800) LEAD LIST for a list of qualified consultants in your area who perform testing services.

If you have already completed repairs or remodeling that could have released lead based paint or dust.

Have your children ages 6 or younger tested for lead. Call your doctor or your local health department to schedule testing.

Keep children away from dust and paint chips.

Clean up all dust and chips with wet mops and rags. Pay special attention to floors and window troughs. If the test reveals lead based paint in your home, it is best to have any repair or remodeling work done by a renovator who knows how to protect your family from exposure to lead dust. It is best to hire one who has training and experience in dealing with the hazards of remodeling or renovating homes with lead based paint. If you chose to do this work, you should follow all of the work practices and safety precautions in article.

Replacing or Working on Windows

Windowsills and frames on homes built before 1978 can have high amounts of lead based paint. Because these items are seldom replaced, paint tends to build up on them. To remove a window safely, follow these basic safety precautions:

Tape the thick, plastic sheeting over the entire inside window opening.

Cover the floor under the window with the plastic sheeting to catch any falling dust. Also, cover the ground outside the window with the plastic sheeting to catch dust and chips.

Spray the windowsill and frame with water to reduce the dust.

Remove the window unit from the outside, if possible. If you must remove it from the inside, make sure you cover all entryways into the room in which you are working with the plastic sheeting.

Clean up, vacuum and dispose of all waste.

Performing Duct and Plumbing Work

Duct Work

Heating, ventilation, and air conditioning ducts can collect dust over the years. If you suspect that the dust contains lead, follow these steps when replacing or cleaning the ducts:

Cover the floor under the ducts with the thick, plastic sheeting to catch any falling dust. Use a HEPA filter equipped vacuum cleaner to remove dust from inside the ducts before starting work.

Rinse the duct pieces in an area away from your home before putting them back in place. If you are going to dispose of the old duct pieces.

Plumbing

Disturbing lead soldered pipes can knock loose pieces of lead solder that can get into your drinking water. Follow these precautions when working with plumbing:

Use enough ventilation to avoid inhaling dangerous fumes from soldering.

Carefully throw away solder pieces in a tightly sealed trash bag.

Use lead free solder when working on drinking water plumbing.

Remove faucet aerators and clean out any debris before reinstalling them. Look carefully for grit or pieces of solder and remove them.

Flush the supply pipes of loose pieces of solder by letting the water run for several minutes with the aerators removed.

Also, consider removing older plumbing fixtures such as faucets, lead pipes, or pipes connected with lead soldering and replacing them with lead free ones. Consult a plumber or plumbing materials distributor for more information.

Performing Minor Repairs

Performing minor repairs on lead painted surfaces can expose you to lead hazards. If you plan to make minor repairs, such as repairing a door, drilling holes in walls, or sawing into painted wood or plaster, follow these steps:

Cover the floor under the work area with the thick, plastic sheeting to catch any sludge or dust.

Spray the work area surface with water to reduce the amount of dust generated during the repair.

To eliminate friction points on a door, first mist the door, then remove the door to plane it. Keep door surfaces being planned wet during repair. Replace the door when the work is complete. After making the repair, use a HEPA filter equipped vacuum cleaner to vacuum all surfaces within five feet of the work area.

Interim Controls

There are ways you can temporarily control exposure to lead based paint, dust, and soil. They are called interim controls.

Keep in mind interim controls will not get rid of lead hazards forever. They can, however, help cut down on the risk of exposure.

Lead dust in your home can be harmful to you and your family. It should be removed.

Safe Management of Lead Based Paint in Your Home

Interim controls are actions you can take to reduce lead hazards in your home without hiring an abatement contractor. They are less expensive than abatement and a good alternative if you cannot afford abatement, but it is very important to remember that the results are only temporary. Nevertheless, if maintained properly, interim controls can protect you and your family for a long time. A list of interim controls follows.

They can be used separately or together:

- Removing lead dust.
- Repainting lead based painted surfaces.
- Repairing friction and impact surfaces.
- Preventing access to soil hazards.

ADVANTAGES of Interim Controls

Less expensive than abatement.

Can be implemented immediately.

DISADVANTAGES of Interim Controls

Lead based paint remains in housing.

Continuing expense, if done regularly.

Requires ongoing monitoring of paint condition and dust levels.

When Interim Controls Will NOT Work

Interim controls will not work if:

- The windows, doors, porches, or interior or exterior walls are seriously deteriorated or are subject to excessive moisture.
- The windows, doors, porches, or interior or exterior walls are not sound (which would cause the treatment to fail rapidly).
- If any child in the home has an elevated blood lead level, many states and localities require you to have the home abated by a certified contractor. Contact your state lead program contact.

Although interim controls will not rid your home of lead based paint hazards forever, they can help you reduce the risk of exposure if you do them right and check your work often. To ensure success when you perform any type of interim control, it is recommended that you:

Surround your work area with thick, plastic sheeting to avoid spreading lead dust to other parts of your home.

Hire a certified contractor to conduct a clearance examination once you have finished your work. This is not required, but a contractor can determine if you successfully completed the interim control action.

Check your interim control work once a year. For example, if you have performed an interim control of lead based paint and see signs of peeling or flaking, you may need to redo the work.

Lead dust in your home can be hazardous to you and your family and should be removed.

Removing Dust

Dust removal is a continuing process. You begin with an initial treatment and then follow up with re cleaning as needed. Dust removal is always a part of lead hazard control measures, whether done alone or as part of cleanup following other work. Lead dust can be found on surfaces and in cracks throughout your home. Windows, worn floors, carpets, and upholstered furnishings seem to collect most of the lead dust. It is very hard to clean these surfaces thoroughly, and dust settles on them rapidly after they are cleaned.

Major Dust Collectors and Potential Dust Traps

Interior	Exterior
Windowsills	Porch swings
Floors or steps	Window troughs
Cracks and crevices	Steps
Carpets and rugs	Exposed soil
Mats	Sandboxes
Upholstered furnishings	Window coverings
Radiators	Heating, ventilation, or air conditioners
Grates and registers	

Removing Lead Dust Inside Your Home

It is very hard to remove lead dust without specialized equipment. You will need to use a vacuum equipped with a HEPA filter combined with wet cleaning methods.

- Vacuum the surface with a HEPA filter equipped vacuum cleaner. This special type of vacuum will trap lead particles and prevent them from being released back into the air. A household vacuum will not do this. Remember when you finish vacuuming, carefully empty the dust collected in the vacuum cleaner, being sure to dampen it with water first to control the spread of collected dust.
- Wet clean exposed areas with a solution of water and an all purpose cleaner or a cleaner made specifically for lead. Use one bucket for the cleaning solution and one bucket for rinsing. Change the rinse water frequently (at least once for each room being cleaned) and replace rags, sponges, and mops often. Clean the surface until no dust is visible. After cleaning, rinse the surface with clean water and a new sponge or cloth.

At the same time that you undertake a cleaning project, have all the drapes and curtains professionally cleaned, and replace the filters in heating and air conditioning units. Have your rugs and carpets professionally cleaned. If you cannot have them cleaned professionally at this time, clean your carpets in the following manner:

For rugs and carpets that can be folded over:

HEPA vacuum the carpet.

Fold the carpet over in half and HEPA vacuum the bottom side of the carpet.

Vacuum the topside of the carpet again.

If there is foam padding under the carpet, clean both sides of the padding.

Vacuum the floor under the carpet.

For carpets that cannot be folded over (such as wall to wall carpeting):

Vacuum the carpet in a side to side direction.

Vacuum the carpet in a side to side direction, opposite the first direction.

Steam clean the carpet using a solution containing detergent specifically made to reduce static between the carpet and lead dust.

For upholstered furnishings:

HEPA vacuum each surface three to five times.

Removing Lead Dust from the Exterior of Your Home

Lead in exterior dust can be dangerous because it can be tracked inside your home. You need to remove as much dust and dirt as possible from all paved surfaces on your property (such as sidewalks, patios, driveways, and parking areas). Removing all lead dust outside your home may not be possible, but by following some simple steps you can reduce your family's exposure to exterior lead dust.

These measures need to be repeated often to maintain safe lead dust levels outside your home:

Remove all large items, such as outdoor furniture, from the areas you are going to clean. Dampen the areas with water to control the spread of lead dust.

Vacuum all hard surfaces with a HEPA filter equipped vacuum cleaner. Clean all surfaces continuously until no visible dirt or dust is present.

Carefully empty the dust collected in the vacuum cleaner, being sure to dampen it with water first to control the spread of the collected dust.

Repainting Lead Painted Surfaces

Repainting is often used on painted surfaces that have begun to deteriorate due to problems such as structural defects or water damage. It is a good choice for walls and ceilings because they are not constantly bumped or rubbed. Repainting a surface with a lead free paint will help to lessen lead hazards by reducing the amount of lead dust and paint chips. It is very important that you check the surface regularly and maintain it. If properly maintained, you can expect your repainting effort to last from 4 to 10 years.

Recommendations for Repainting a Lead Painted Surface

If you plan to repaint a lead painted surface, take the following steps:

Make sure that what is causing the paint to deteriorate is fixed or eliminated. This can include repairing water leaks, defective plaster, and damaged structural parts.

Use a high quality paint recommended by a manufacturer for the type of surface you are painting.

Read and follow the manufacturer's instructions for applying paint.

Repairing Friction and Impact Surfaces

Friction surfaces are surfaces that are subject to abrasion, that is, rubbing or friction actions that cause wear on a surface. Common examples of friction surfaces are the parts of a window that rub when opened and closed, tight fitting doors, cabinet doors and drawers, stairs and hand railings, and floors. When covered with lead based paint, friction surfaces subject to abrasion can disturb lead based paint. Friction surfaces may be treated by fixing the areas that rub together.

For example, if you replace a tight fitting door with a loose fitting one, you will reduce the chances that the door will create lead dust.

Impact surfaces are surfaces that stick out and tend to be bumped or banged. The most common impact surfaces are doors and doorjambs, door trim, doorstops, outside corners of walls, baseboards, shoe moldings, chair rails, and stair risers. Repeated impacts can cause small chips of paint to fall to the floor and contaminate dust. You can reduce impact surface problems by placing barriers in front of the surfaces. For example, put a new chair rail on a lead painted wall. This will lessen the damage done to the wall when a chair bumps against the rail.

How to Repair a Friction or Impact Surface?

The following actions will help to reduce lead hazards from lead painted friction and impact surfaces in your home. Remember when performing any type of interim control, always cover work areas with thick, plastic sheeting and spray components with water to reduce dust.

If you are repairing a window, remove the window. Wet scrape the deteriorated paint. If the window trough is badly weathered, cover with back caulked, aluminum coil stock. Reinstall the window.

If you are repairing a door, remove the doorstop and dispose of it properly. Remove the door by pulling out the hinge pins. Mist the door with water and plane the door to eliminate areas that might rub together. Reinstall the door and install a new doorstop.

If you are repairing stairs, install a hard, cleanable covering, such as rubber tread guards. You can install carpeting on the stairs instead, but fasten it securely so that it does not cause abrasion. Repaint any railings that may have deteriorated lead based paint.

Other ways to repair friction and impact surfaces include.

- Removing and replacing shoe moldings around baseboards.
- Installing new plastic or wood corner beads to abraded outside corners.
- Removing and replacing cabinet doors, or having the paint stripped off at a professional paint stripping plant. Strip paint from drawers and drawer guides or plane impact points and repaint. Or, install rubber or felt bumpers at points of friction or impact.
- Repainting porches, decks, and interior floors.

Preventing Access to Soil Hazards

Whether the source is lead based paint or leaded gasoline, soil that is contaminated by lead can be dangerous if children play in it or if it is tracked into your home by people and pets. If you think that your soil may be contaminated, have a risk assessor test it. A test will determine what action, if any, needs to be taken. Never plant vegetable gardens in lead contaminated soil. You can get lead poisoned from eating carrots and leafy vegetables grown in leaded soil.

Abatement

Lead Abatement: What It Is, Who Should Do It

You can reduce the risk of lead exposure in your home by having a contractor perform an abatement. An abatement is a way to permanently contain or remove lead hazards. Merely painting or papering over lead painted surfaces is not abatement.

The four abatement methods for structural components are:

- **Replacement.** Removing a part of a building that contains lead based paint and replacing it with a new, lead free part.
- **Enclosure.** Building a new wall, ceiling, or floor over an existing one.
- **Encapsulation.** Using a special type of coating to cover a lead painted surface.
- **Paint removal.** Stripping the lead based paint off an object. EPA strongly recommends that you use a certified abatement contractor. If the abatement and the cleanup following it are not done right, the chance of lead poisoning will increase. A contractor trained in lead based paint hazards and abatement will know how to safeguard your family before, during, and after an abatement.

When hiring an abatement contractor, use the following checklist to find someone who can do the job safely and correctly.

Tips for Finding and Selecting an Abatement Contractor

Begin by getting a list of lead contractors. Call the HUD Lead Listing at (888) LEAD LIST for a list of inspectors, risk assessors, and abatement contractors who have been trained by an EPA accredited training provider. Your state lead contact can also provide a list of contractors who perform lead activities in your area.

Check your contractor's credentials. Always ask to see a contractor's lead based paint license or certificate. If the contractor is not certified, ask to see the contractor's training certificate. EPA has developed training courses for lead based paint professionals so ask if the contractor's training was based on EPA course materials. Beginning in August 1999, Federal law will require lead contractors to be certified.

Check your contractor's references. Call at least three of your contractor's previous clients. Make sure your contractor safely and properly completed the work requested.

Once you have hired a contractor, you should understand what your contractor is going to do. Start by:

Having your contractor explain how the project will be carried out.

Talking to your contractor about what precautions will be taken to prevent you and your family from being exposed to lead.

Depending on the type of lead hazard, your contractor will choose either replacement, enclosure, encapsulation, paint removal, or a combination of these. Read on for more information.

Replacement

Replacement is the removal of a building part that contains lead based paint and the replacement of that part with a new, lead free one. Replacement is a good choice for windows, doors, and woodwork. Replacement of walls, ceilings, and floors is very expensive, and the process stirs up a lot of dust. Enclosure or encapsulation might be a better choice.

Lead based painted windows are often the highest source of lead dust in a home.

Advantages of Replacement.

Removes lead based paint permanently.

Safest permanent intervention.

Upgrades your home.

Can lower heat and maintenance costs.

Disadvantages of Replacement.

Expensive.

Areas next to replaced part may be damaged.

Replacement part may not be as good as the original.

Enclosure

Enclosure is the process of covering lead painted surfaces with paneling, wallboard, or other materials. The materials are fastened with screws and sealed with caulking to prevent exposure to the lead painted surfaces.

Enclosure is useful for surfaces that are cracked or chipped. Encapsulation may be a better choice for surfaces in good condition. Enclosure is most appropriate for walls, ceilings, and floors.

Advantages of Enclosure

Cost effective.

Durable.

Generates little contamination.

Disadvantages of Enclosure

May not be a permanent solution.

Must be checked every 3 to 6 months to make sure it stays intact.

Encapsulation

Like enclosure, encapsulation provides a barrier that prevents lead dust from spreading. With encapsulation, however, the barrier is a special type of coating called an encapsulant applied to a lead painted surface. Once dry, it forms a stiff barrier, which can then be painted. This method of abatement is a good choice for wall surfaces in good condition, for surfaces that are not rubbed often, and for curved surfaces.

Advantages of Encapsulation.

Generates little contamination.

Inexpensive.

Disadvantages of Encapsulation

Use of some encapsulant products will create hazardous waste.

Cannot be used in high friction areas.

May not be a permanent solution.

Must be checked every 3 to 6 months to make sure it stays intact.

Paint Removal

Paint removal is the stripping of lead based paint from an object. This process creates a large amount of lead and waste, so choose paint removal only if no other abatement strategy will work, or if an object has historical value.

It is possible to have paint removed on site (in your home) or off site (at a paint stripping plant). You can reduce the risk of lead exposure during abatement by choosing off site paint removal, and allowing items to be taken from your home to a professional stripping plant.

Advantages of Off Site Paint Removal

Keeps hazardous chemical strippers out of your home.

Preserves the detail on decorative doors, molding, and trims.

Useful on antique items that cannot be replaced.

Disadvantages of Off Site Paint Removal.

The liquid waste you generate when you rinse and clean the stripped items may be hazardous.

Chemical stripping never removes all of the lead.

Leftover stripper will cause the new paint coat to fail.

Removing a building component for off site stripping creates dust.

Exterior Paint Removal

Lead based paint found on the outside of your house can be hazardous too. It may need to be removed or enclosed so that it does not get into the dirt surrounding your house.

To get rid of the lead based paint on the exterior of your house, your contractor will likely use vacuum blasting, water blasting, or exterior enclosure.

Advantages of Vacuum or Water Blasting

Can be used on the exterior of your home.

Disadvantages of Vacuum or Water Blasting.

Can damage the treated surface, especially wood.

Creates a lot of waste and can spread paint chips around nearby areas.

Very expensive.

Help from a Risk Assessor or a Contractor

In some households, interim controls work well. Others require abatement. For still others, the best approach is to combine interim controls with abatement. Deciding on the safest, most efficient, and most cost effective approach in your case is difficult, so consider consulting a certified risk assessor. Risk assessors are trained to identify strategies for reducing the hazards of lead based paint.

Cleaning Up Lead Waste

Cleanup is the most important step in controlling or getting rid of lead hazards.

If the cleanup is done incorrectly, your home may be more hazardous than it was before the work began.

Dust contaminated with lead by home projects from remodeling to interim controls and abatement can be hazardous to you and your family. In fact, if this dust is not properly removed both during and after projects your home could be more hazardous than it was before work began.

Cleanup is the most important step in your project. Here are some tips for daily cleanup, personal cleanup, and final cleanup after the job is done.

Daily Cleanup

Daily cleanup is important whenever you or your contractor work with lead. Daily cleaning prevents the spread of lead dust and makes cleanup at the end of the project much easier.

At the end of every project day, do the following:

Wrap up and label any debris or trash.

Mop floors and wash exposed surfaces and tools with a solution of water and an all purpose cleaner or a cleaner made specifically for lead. Allow to dry.

Strain out paint chips from liquid waste and dispose of them in a heavy duty plastic bag. Vacuum all exposed surfaces and any plastic sheeting with a HEPA filter equipped vacuum cleaner.

Cleanup is the most important step.

Mist outside areas using a garden hose before sweeping these areas with a broom. Avoid dry

sweeping since it spreads lead dust. Shovel, rake, or HEPA vacuum debris into heavy duty plastic bags placed in cardboard boxes for support.

Clean your vacuum and tools with a solution of water and an all purpose cleaner or a cleaner made specifically for lead.

Seal off the entryways with the thick, plastic sheeting if you have to leave a work site unattended.

Personal Cleanup

It is very important that whoever has been doing the work follow these steps to prevent lead dust from spreading to other areas of your home:

Wash your hands and face whenever you leave your work area.

Change your clothes and shoes before leaving the work area. After removing your clothes, wash them immediately, separately from other family laundry.

Shower and wash your hair right after finishing work to prevent spreading lead dust. Keep in mind that anyone observing lead hazard control work or entering a room in which work is being done needs to take safety precautions as well. They should always remove their shoes before leaving the work area and wash their hands after leaving the work area.

Final Cleanup

Final cleanup, which takes place at the end of a project, must be performed slowly and carefully. It should occur no sooner than 1 hour after the project ends. Time is needed to let lead dust settle.

Here are the steps of the final cleanup process:

Collect waste and debris and seal in plastic bags.

Carefully remove any plastic sheeting by rolling or folding inward.

Wash all surfaces with a solution of water and an all purpose cleaner or a cleaner made specifically for lead. Allow to dry.

Vacuum all exposed surfaces with a HEPA filter equipped vacuum. After the above tasks have been performed, you should not see any dust.

Clearance Examination

After any type of lead work has been performed in your home, it is strongly recommended that you hire a professional to perform a clearance examination. This is especially important after

an abatement procedure. Because an abatement is likely to disturb lead painted surfaces, you need to be certain that you and your family will not be exposed to lead hazards. A clearance examination includes a visual examination and an analysis of dust samples to ensure that lead levels are not a danger to you and your family and that cleanup was done properly. The clearance examination should take place no sooner than 1 hour after any cleaning activity to allow lead particles to settle.

For a list of qualified professionals in your area who perform testing services, call your state lead contact or the U.S. Department of Housing and Urban Development's Lead Listing at (888) LEAD.LIST. You can also get testing and laboratory information by calling the National Lead Information Center's Clearinghouse at (800) 424 LEAD.

The purpose of the clearance examination is to make sure that dust levels are low so you and your family will not be exposed to lead hazards.

Hazardous Waste Disposal

Working with lead produces many types of waste materials. Including lead based paint chips, liquid waste, used cleaning materials, and lead painted doors and windows. Do not keep waste materials like doors, windows, and scraps of wood for other uses, and never burn lead painted wood. This creates hazardous lead fumes. Hazardous waste that is not disposed of properly will harm the environment. Under the Resource Conservation and Recovery Act (RCRA) and state or local regulations, certain types of waste are considered hazardous and must be disposed of at a hazardous waste facility. If you generate lead waste in your own home, however, the hazardous waste requirements may not apply to you. Call your state lead contact to see how lead trash should be disposed of in your area.

From the IAQ Tools for Schools IAQ Coordinator's Guide
www.epa.gov/iaq/schools/tfs/guidee.html

Description	Sources	Standards or Guidelines
Lead is a highly toxic metal.	Sources of lead include drinking water, food, contaminated soil and dust, and air. Lead based paint is a common source of lead dust.	The Consumer Product Safety Commission has banned lead in paint.
Health Effects		Control Measures
Lead can cause serious damage to the brain kidneys, nervous system, and red blood cells. Children are particularly vulnerable. Lead exposure in children can result in delays in physical development, lower IQ levels, shorten attention spans, and increase behavioral problems.		

Abatement Guidelines for Your Contractor

Once you have hired an abatement contractor, you should know how the abatement project will be carried out. The information in this appendix will help. It lists general guidelines for performing the four types of structural abatement, including:

- Replacement
- Encapsulation
- Enclosure
- Paint Removal

Keep in mind these are not step by step instructions. The guidelines are meant to help you make sure that your contractor is working safely and properly.

Method Where It Is Best Used

Encapsulation. Walls, ceilings, and trim. Curved surfaces.

Enclosure. Floors, pipes, ceilings, exterior trim, etc.

Paint Removal and Wet Scraping. Loose paint. Should not be used as a removal method for large areas.

Off Site Chemical Stripping. Restoration of historic pieces. Doors, mantels, metal railings, trim.

Solvents. Metal substrates. To clean residue left by other methods.

Heat Gun. Flat surfaces. To soften thick layers of paint. (Should not be operated above 1100° F)

Q. What should I do to prepare for an abatement?

A. Everyone in your home, especially children and pregnant women, must stay out of the house until the work is done and the cleanup, including dust sample analysis, is complete. In some cases, after the work area is contained, you may be able to enter your home if you stay out of the work area.

Replacement

Replacing Doors, Windows, and Woodwork

Opening and closing doors or windows stirs up lead dust. Bumping or banging woodwork does too. You may need to replace some of them to prevent lead dust from spreading to other areas of your home.

Make sure your contractor:

- Covers the area around the part being replaced and any nearby surfaces with two or three layers of 6 mil polyethylene plastic sheeting. When the part being removed is a window, make sure the contractor attaches this plastic sheeting to the wall below the window and extends it at least 6 feet on each side of the window to contain lead dust and debris.
- Mists the component with water before removing it.
- Vacuums the part to be removed with a HEPA filter equipped vacuum to prevent lead dust from spreading.
- After removal, wraps the part in plastic sheeting.
- Before installing the new part, disposes of the old part and cleans the work area.

Encapsulation

Depending on the task to be performed, your contractor can choose from among many encapsulation products and should consider where the encapsulant will be applied. Encapsulant makers provide directions on preparing surfaces and on monitoring, maintaining, and cleaning encapsulated surfaces. If properly applied and maintained, an encapsulant should last for 20 years.

Whenever possible, windows should be removed from the outside of your home to prevent the spread of lead dust inside.

Enclosure

Preparing the Area

Make sure your contractor:

- Eliminates all moisture sources and allows the surface to dry.
- Lays thick, plastic sheeting (mentioned on pages 25 and 60) around the work area to prevent lead dust from spreading to other parts of the room, or to other rooms in your home.

Enclosing a Wall

Make sure your contractor:

- Writes the words "Lead Based Paint" on the wall to be enclosed.
- Nails strips of wood 12 inches apart down the wall being enclosed.
- Nails one horizontal strip of wood along the base of the wall, and seals it with caulk along the bottom edge to create a dust tight seal.
- Measures and caulks the new wallboard or paneling, and attaches it to the original wall.
- Measures and caulks the baseboard, and attaches it to the bottom of the wallboard.
- Measures and caulks the shoe molding, and attaches it to the bottom of the baseboard.
- Completely cleans the work area.
- Paints or papers the new wall.
- Exterior walls can be enclosed in much the same way.

Enclosing a Ceiling

Make sure your contractor:

- Writes the words "Lead Based Paint" on the ceiling to be enclosed.
- Using a stud finder, finds the ceiling studs.
- Measures the wallboard carefully.
- Caulks and screws the wallboard directly into the ceiling studs.
- Completely cleans the work area.
- Paints the new ceiling.

Paint Removal

There are many ways to remove paint, and some of them should never be used on lead based paint. They include:

- Torch or flame burning.
- Open abrasive blasting.
- Uncontained water blasting.
- Machine sanding without a HEPA filter.
- On site use of chemical strippers that contain methylene chloride.
- On site use of flammable solvents.

- Solutions of potassium or sodium hydroxides.
- Dry scraping large areas.

Off Site Paint Removal

Offsite paint removal works best for doors, mantels, and other trim that may have architectural or historical value. The items are dipped into a tank of chemical stripping agents, and the paint dissolves off the surface. Be sure to wash the items before reinstalling them. You may also need to refinish or re glue the pieces.

On Site Paint Removal

If you must have paint removed in your home, your contractor can apply one or more of these methods:

Wet scraping. Wet scraping is a way to prepare a surface for repainting by removing loose paint. The surface must be misted before being scraped to keep lead dust levels down. It also must be misted constantly while it is being scraped.

Wet planning. Similar to wet scraping, the surface must be misted with water before being planned and while it is being planned.

Electric heat guns. Electric heat guns' force warmed air onto a painted surface. The heat softens the paint, and then scraped off with hand tools. Heat guns should not be warmed above 1100°F. If heated above this temperature, lead based paint can give off toxic fumes.

Local exhaust hand tools. These handheld power tools are attached to a HEPA vacuum by a hose. The vacuum contains a HEPA filter to prevent the spread of lead dust.

Chemical stripping. Some states prohibit the use of methylene chloride, which is often used in chemical strippers. Your contractor should know whether chemical stripping is an option in your state. If not, check with your state lead contact.

Vacuum Blasting, Water Blasting, and Enclosure for Exterior Paint

Although vacuum blasting or water blasting should never be done inside your home because of the waste they create, your contractor may remove paint from the exterior of your home using these methods. To avoid contaminating areas around your home and your neighbors' homes, make sure your contractor controls the spread of any waste or debris.

When removing exterior paint, make sure your contractor:

- Protects the soil, bushes, plants, and the area around your home by taping thick, plastic sheeting to the base of the structure. The plastic sheeting should extend at least 6 feet for every story.

- Places 2" x 4" boards under the edge of the plastic sheeting to create a curb. The curb should direct the wastewater into a low spot, where it can be pumped into a 55 gallon drum.
- Cleans and smoothes the surface.

Enclosing outside surfaces with a dust tight material or aluminum siding is often the best method to use. This will protect the lead based paint from the elements and will increase the energy efficiency of your home. It also creates less waste than other abatement methods.

Chemical stripping is the use of solvents or caustic pastes to dissolve and strip off paint. Chemical strippers are dangerous and may give off harmful vapors, which can catch on fire.

Glossary

Abatement A procedure that eliminates lead based paint hazards or lead based paint. The four types of abatement methods are removal, enclosure, encapsulation, and replacement. Removal and replacement are permanent.

Abrasion Rubbing or friction that causes wear on a surface.

Accredited training provider A training provider approved by EPA to train individuals to be risk assessors, inspectors, supervisors, and workers.

All purpose cleaner A general purpose cleaning product.

Bare soil Soil not covered with grass, sod, other vegetation, or pavement. This also includes the sand in sandboxes.

Blood lead level A measurement of how much lead is in the body.

Certified The designation for contractors who have completed training and other requirements to allow them to carry out risk assessments, inspections, or abatements safely. Risk assessors, inspectors, and abatement contractors should be certified by the appropriate local, state, or Federal agency.

Characteristics (of hazardous waste) EPA has identified four characteristics of hazardous waste: how easily the waste ignites, how corrosive it is, how it reacts with other substances, and how toxic it is to people and the environment. Any solid waste that has at least one of these characteristics may be classified as hazardous under the Resource Conservation and Recovery Act (RCRA), depending on how the waste is produced and how much is generated.

Chemical stripping A paint removal method that uses chemicals to strip off paint.

Chelation A medical drug treatment for lead poisoning.

Cleaner made specifically for lead Cleaning product made specifically for cleaning and removing lead contaminated dust. Can be found in some paint and hardware stores.

Cleaning The process of using a HEPA vacuum and wet cleaning agents to remove lead dust. See also HEPA filter and wet cleaning.

Clearance examination an inspection performed after abatement work is completed in housing that contains lead hazards. Also recommended after interim controls and renovation and remodeling activities. Dust levels are checked to be sure that they meet standards.

Clearance examiner an individual who performs a clearance examination, usually a risk assessor or inspector. See also clearance examination.

Contaminate The process by which an area may become infected through contact or association.

Contractor Any business, public body, or person doing work on a lead based paint hazard control project.

Deteriorated lead based paint Any lead based paint that is peeling, chipping, blistering, flaking, worn, chalking, cracking, or otherwise becoming separated from the surface to which it was applied.

dl Short for deciliter. A deciliter is one tenth of a liter, or a little less than half a cup of liquid. This measurement is used when measuring blood in the body.

Disposal (of hazardous waste) Getting rid of hazardous waste in a way that prevents it from polluting the environment.

Durable Able to exist for a long time without deterioration.

Dust removal A type of interim control that involves initial cleaning followed by periodic monitoring and re cleaning, as needed.

Dust trap A surface, component, or furnishing where dust may accumulate.

Encapsulation an abatement method in which a lead painted surface is coated with a special liquid paint that hardens and prevents lead dust from being released.

Enclosure an abatement method in which a lead painted surface is covered with paneling, wallboard, or other approved material to prevent lead dust from being released.

Evaluation an assessment that includes a risk assessment, paint inspection, reevaluation, investigation, clearance examination, or lead hazard screen.

Exterior work area The area outside a housing unit in which lead hazard control work is performed. It includes areas such as porches or outdoor stairways.

Friction surface Any interior or exterior surface, such as a window or a door, subject to abrasion or friction.

Gram A metric unit of weight equal to one thousandth of a kilogram. It is close to the weight of a penny.

Hazardous waste Any waste that is considered dangerous to people or the environment by state or Federal laws.

Heat gun A device that forces warmed air onto a painted surface and softens the paint so it can be removed. Heating and burning lead based paint makes dangerous fumes and vapors. If a heat gun must be used, it should not be warmed above 1100° F.

High Efficiency Particulate Air (HEPA) filter A filter that can remove very small lead particles and prevent them from being redistributed into the air. HEPA filters are used on respirators and vacuum cleaners to prevent lead exposure from projects that disturb lead based paint.

Hydro blasting The process of using high powered water pressure to loosen exterior paint so it can be removed.

Impact surface an interior or exterior surface such as the surface of a door subject to damage by repeated impact or contact.

Inspection (of paint) An evaluation to determine if lead based paint is present in housing and where it is located.

Inspector an individual who has completed training from an EPA approved program and has been licensed or certified by the appropriate state or local agency to perform a lead based paint inspection. See previous entry above for "inspection".

Interim controls A set of measures that temporarily reduce lead hazards. Such measures include specialized cleaning, repairs, maintenance, painting, and temporary containment.

Interior windowsill The portion of the horizontal window ledge that extends into a room on the inside of a house.

Leach The process in which liquid passes through an object, and particles from the object dissolve into or mix with the liquid.

Lead A heavy, bluish white chemical that can be easily shaped.

Lead based paint Any paint, varnish, shellac, or other coating that contains lead equal to or greater than 1.0 milligram per square centimeter or 0.5 percent lead by weight.

Lead contaminated dust Surface dust in residential settings that contains levels of lead that pose a threat of adverse health effects in pregnant women or young children. The term is defined this way for the purpose of Lead In Your Home: A Parent's Reference Guide. However, this is a technical term that will be further defined by the EPA in the TSCA 403 regulation.

Lead contaminated soil Bare soil in residential settings that contains lead at levels that are hazardous to human health. The term is defined this way for the purpose of Lead In Your Home: A Parent's Reference Guide. However, this is a technical term that will be further defined by the EPA in the TSCA 403 regulation.

Lead hazard Dangerous conditions or circumstances that cause lead exposure at levels that would result in adverse human health effects. Lead hazards could include deteriorated lead based paint, lead contaminated dust, and lead contaminated soil. The term is defined this way for the purpose of Lead In Your Home: A Parent's Reference Guide. However, this is a technical term that will be further defined by the EPA in the TSCA 403 regulation.

Lead hazard control Activities to control and eliminate lead hazards. They include interim controls and abatement.

Lead hazard screen A type of risk assessment performed only in housing in good condition using fewer samples but more stringent evaluation criteria to determine the absence of lead based paint.

Maintenance Work intended to maintain adequate living conditions in a housing unit.

Mg Short for milligram. It is equal to one thousandth of a gram.

Mil an English unit often used to measure the thickness of paint film or plastic sheeting. It is equal to one thousandth of an inch.

Monitoring Surveillance to make sure lead based paint and lead dust are kept under control and that activities performed to control lead hazards continue to be successful.

NIOSH National Institute for Occupational Safety and Health. When you purchase a respirator, make sure the package says it is certified by NIOSH.

Off site paint removal The process of removing a component from housing and stripping the paint from the component at an off site paint stripping facility.

On site paint removal The process of removing paint from components inside the housing.

Owner The person who holds the title to a housing unit.

Paint removal An abatement strategy to remove lead based paint from identified surfaces

Parts per million (ppm) Measurement used to identify the amount of lead in paint. It is the weight of lead per 1,000,000 weights of a sample, including the lead. For example, if a paint sample contains 5,000 micrograms of lead in 1 gram of paint, then the lead concentration is 5,000 ppm.

Priming to prepare a surface for painting.

Reevaluation an assessment performed by a certified risk assessor to determine if a previously implemented lead based paint hazard control measure is still effective and if the dust and soil levels remain lower than EPA standards.

Replacement A type of abatement that involves removing housing components coated with lead based paint such as windows, doors, and trim and installing new components that are free of lead based paint. Resource Conservation and Recovery Act (RCRA) A Federal law that defines hazardous and nonhazardous waste and regulates hazardous waste disposal.

Respirator A device worn to cover the mouth and nose. When working with lead based paint, the only type of respirator that will filter out lead dust particles is one equipped with a HEPA filter.

Risk assessment an on site investigation of housing to determine if lead hazards are present and how they can be controlled.

Risk assessor A certified individual who has completed training with an accredited training program and has been certified to perform a risk assessment. See also risk assessment.

Sandblasting A process in which sand is blown by air or steam to remove paint.

Safe Drinking Water Act (SDWA) A law that limits the amount of which certain chemicals are allowed in drinking water. Congress made additions to this act in 1986 and 1988, which made it illegal to use lead in household plumbing.

Screening The process of testing children to determine if they have elevated blood lead levels.

Solder A combination of metals used to join or patch metal parts or surfaces. Solder sometimes contains lead.

Solid waste Garbage, refuse, sludge or other discarded materials resulting from domestic, industrial, or commercial operations or from community activities.

Substrate A surface on which paint, varnish, or other coating has been applied or may be applied. Examples of substrates include wood, plaster, metal, and drywall.

Title X This law directs Federal agencies to develop regulations to strengthen and redirect national lead poisoning prevention efforts. Also called the Lead Based Paint Hazard Reduction Act of 1992.

Trained The successful completion of a training course in one of the following disciplines: inspector, risk assessor, supervisor, project designer, and abatement worker. For lead hazard control work, the training course must be accredited by EPA or by an EPA approved state program.

Treatment In residential lead hazard control work, any method designed to control lead based paint hazards. This includes interim controls and abatement.

g Short for microgram. A microgram is one millionth of a gram.

g/dL Short for micrograms per deciliter. The measurement used to express how much lead is in your blood.

Wet cleaning The process of using a mixture of water and a household cleaner to remove lead dust.

Wet planning A process of smoothing off a surface. The surface is wet misted before being planned to keep dust levels down.

Wet scraping A process used to remove loose or chipping paint. The paint is wet misted before being scraped to keep dust levels down.

Window trough for a typical double hung window, the part of the exterior windowsill between the interior windowsill and the frame of the storm window. This is sometimes inaccurately called the window well. See also window well.

Window well The space that provides exterior access or light to a window that is below the level of the surrounding earth or pavement.

Worker an individual who performs lead hazard control work. Beginning in 1999, workers must be trained by an EPA accredited provider and certified by EPA or a state or tribe to perform lead hazard control work.

Work area Any interior or exterior area where lead hazard control work is performed.

Resources

Testing Your Home for Lead in Paint, Dust, and Soil (PDF format). Provides homeowners with an understanding of lead testing methods.

National Lead Information Center Hotline epa.gov/opptintr/lead/nlic.htm
1(800) 424 LEAD [5323]

You can order materials or speak to an information specialist by contacting The National Lead Information Center (NLIC) at 1 800 424 LEAD (5323). Information is available 24 hours a day, seven days a week in English and Spanish. The Hotline provides basic information packet on lead in English and Spanish. The Packet includes the EPA brochure "Lead Poisoning and Your Children", three fact sheets, and a list of State and local contacts for additional information. Callers with specific questions are referred to the Clearinghouse to speak directly with an information specialist.

Office of Prevention, Pesticides, and Toxic Substances (OPPTS) Lead Program epa.gov/lead

Office of Air and Radiation page on Lead epa.gov/air/urbanair/lead/

Department of Housing and Urban Development, Office of Healthy Homes and Lead Hazard Control www.hud.gov/offices/lead/

EPA's Lead in Drinking Water Program <http://www.epa.gov/safewater/lead/index.html>

Call EPA's Safe Drinking Water Hotline (800 426 4791) for more information.

Lead Clearinghouse

1 800 424 LEAD

[1 800 424 5323]

Contacts

Alabama

Bureau of Environmental Services
Department of Public Health
201 Monroe Street, Suite 1250
PO Box 303017
Montgomery, AL 36130.3017
(334) 206.5373

Alaska

Department of Health and Social Services
Division of Public Health
Section of Epidemiology
3601 C Street, Suite 540
P.O. Box 240249
Anchorage, AK 99524 0249
(907) 269.8044

Arizona

Office of Environmental Health
Arizona Department of Health Services
3815 N. Black Canyon Highway
Phoenix, AZ 85015

(602) 230.5943

Arkansas

Department of Health
Environmental Health and Protection
4815 West Markham Street, Slot 46
Little Rock, AR 72205.3867
(501) 661.2171

California

Childhood Lead Poisoning Prevention
Branch
California Department of Health Services
5801 Christie Avenue, 6th Floor, Suite 600
Emeryville, CA 94608
(510) 450.2453

Colorado

Lead Poisoning Prevention Program
DCEED LEAD A3
4300 Cherry Creek Drive, South
Denver, CO 80246 1530
(303) 692.2685

Connecticut

Division of Environmental Health
Department of Public Health
450 Capitol Avenue, P.O. Box 340308
Mail Stop 51LED
Hartford, CT 06134.0308
(860) 509.7293

Delaware

DHSS
Division of Public Health
Jesse S. Cooper Building
P.O. Box 637
Dover, DE 19903
(302) 739.4731

District of Columbia

Department of Health
Environmental Health Administration
2100 Martin Luther King Jr. Avenue, SE
Suite 404

Washington, DC 20020
(202) 645.6093 x3066

Florida

Department of Health
Bureau of Environmental Toxicology
1317 Wine wood Boulevard
Tallahassee, FL 32399.0700
(904) 488.3385

Georgia

Georgia Childhood Lead Poisoning
Prevention Program
Department of Human Resources
2 Peachtree Street, NW, 5th Floor Annex
Atlanta, GA 30303 3186
(404) 657.6514

Hawaii

Department of Health
Environmental Health
P.O. Box 3378
Honolulu, HI 96801
(808) 586.4424

Idaho

Idaho Department of Health and Welfare
Bureau of Environmental Health and Safety
Towers Building, 4th Floor
P.O. Box 83720
Boise, ID 83720.0036
(208) 334.6584

Illinois

Division of Environmental Health
Asbestos and Lead Programs
Department of Public Health
525 W. Jefferson
Springfield, IL 62761
(217) 782.3517

Indiana

Childhood Lead Poisoning Prevention
Program
Maternal and Child Health Services

State Department of Health
2 North Meridian
Indianapolis, IN 46204
(317) 233.1232

Iowa

Lead Poisoning Prevention Program
Department of Public Health
Lucas State Office Building
321 E. 12th Street
Des Moines, IA 50319.0075
(515) 242.6340

Kansas

Bureau of Environmental Health
Mills Building
Suite 604
109 SW 9th Street
Topeka, KS 66612.1274
(785) 296.0189

Kentucky

Division of Environmental Health and
Community Safety
275 E. Main Street
Frankfort, KY 40621
(502) 564.4856

Louisiana

Asbestos and Lead Program
Department of Environmental Quality
Office of Air Quality Division
5222 Summa Court
Baton Rouge, LA 70809
(504) 765.2547

Maine

Maine Childhood Lead Poisoning
Prevention Program
Division of Community and Family Health
151 Capitol Street
Augusta, ME 04333
(207) 287.4311

Maryland

Environmental Lead Division
Waste Management Administration
Department of the Environment
2500 Broening Highway
Baltimore, MD 21224 (410) 631.3825

Massachusetts

Childhood Lead Poisoning Prevention
Program
Department of Public Health
470 Atlantic Avenue, 2nd Floor
Boston, MA 02210.2224
(617) 753.8401
(888) NOLEAD0 or (888) 665.3230

Michigan

Department of Community Health
Public Health Agency
3423 N. Martin Luther King Jr. Boulevard
P.O. Box 30195
Lansing, MI 48909
(517) 335.8011

Minnesota

Director of Environmental Health
Minnesota Department of Health
121 East 7th Place
P.O. Box 64975
St. Paul, MN 55164 0975
(612) 215.0731

Mississippi

Department of Environmental Quality
P.O. Box 10385
Jackson, MS 39289.0385
(601) 961.5171

Missouri

Office of Lead Licensing and Accreditation
Program
Missouri Department of Health
P.O. Box 570
Jefferson City, MO 65102.0570
(573) 526 5873
(888) 837 0927 (in Missouri)

Montana

Department of Environmental Quality
Division of Planning, Prevention and
Assistance
1520 East 6th Avenue
P.O. Box 200901, Metcalf Building
Helena, MT 59620.0901
(406) 444.6697

Nebraska

Department of Health and Human Services
Regulation and Licensure
P.O. Box 9507
301 Centennial Mall South
Lincoln, NE 68509
(402) 471.0782
(888) 242 1100 (in Nebraska)

Nevada

Nevada Division of Health
505 E. King Street, Room 201
Carson City, NV 89701
(702) 687.5845

New Hampshire

Bureau of Health Risk Assessment
Department of Health and Human Services
6 Hazen Drive
Health and Welfare Building
Concord, NH 03301.6527
(603) 271.4507

New Jersey

Lead and Asbestos Program
New Jersey Department of Health and
Senior Services
CN 360
Trenton, NJ 08625
(609) 984.2193

New Mexico

Lead Poisoning Prevention Program
Department of Health
Runnels Building, St. Francis Drive

Santa Fe, NM 87505
(505) 827.0006

New York

Bureau of Community Sanitation and Food
Protection
New York State Department of Health
1215 Western Avenue
Albany, NY 12203
(800) 458.1158

North Carolina

Division of Environmental Health
Department of Environment & Natural Resources
2728 Capital Boulevard
Raleigh, NC 27604
(919) 733.2870

North Dakota

Department of Health
1200 Missouri Avenue
P.O. Box 5520
Bismarck, ND 58506
(701) 328.5188

Ohio

Ohio Department of Health
246 N. High Street
Columbus, OH 43266.0588
(614) 644.8649

Oklahoma

Department of Environmental Quality
4545 N. Lincoln, Suite 250
Oklahoma City, OK 73105
(405) 290.8247

Oregon

Environmental Services and Consultation
Oregon Health Division
800 NE Oregon Street, Suite 608
Portland, OR 97232
(503) 731.4012 x721

Pennsylvania

Childhood Lead Poisoning Prevention
Program
Department of Health
P.O. Box 90, Room 725
Harrisburg, PA 17108
(800) 440.LEAD (in Pennsylvania)

Puerto Rico

Emergency Response and Superfund
Environmental Quality Board
P.O. Box 11488
Santurce, PR 00910
(809) 766.2823

Rhode Island

Department of Environmental Management
Office of Director
235 Promenade Street
Providence, RI 02908
(401) 222.2771 x2402

South Carolina

Department of Health & Environmental
Control
2600 Bull Street
Columbia, SC 29201
(803) 935.7945

South Dakota

Department of Environment and Natural
Resources
Waste Management Program
Joe Foss Building
523 E. Capitol Avenue
Pierre, SD 57501.3181
(605) 773.3153

Tennessee

Department of Environment and
Conservation
Life and Casualty Tower
401 Church Street, 21st Floor
Nashville, TN 37243.0435
(615) 532.0104

Texas

Texas Department of Health
Environmental Lead Program
1100 W. 49th Street
Austin, TX 78756
(512) 834.6600

Utah

Lead Based Paint Program Development
Department of Environmental Quality
150 N. 1950 West
Salt Lake City, UT 84116.4820
(801) 536.4451

Vermont

Childhood Lead Poisoning Prevention Program
Vermont Department of Health
108 Cherry Street
P.O. Box 70
Burlington, VT 05402
(802) 865.7786

Virginia

Lead Safe Virginia Program
Virginia Department of Health
1500 E. Main Street
P.O. Box 2448
Richmond, VA 23218.2448
(804) 225.4455

Virgin Islands

Division of Environmental Protection
Department of Planning and Natural
Resources
396.1 Annas Retreat
Foster Plaza
St. Thomas, VI 00802
(809) 777.4577

Washington

Washington State Department of Health
Office of Toxic Substances
Airdustrial Center Building 4
P.O. Box 47825
Olympia, WA 98504.7825

(360) 236.3381

West Virginia

Environmental Health Services
815 Quarrier Street, Room 418
Charleston, WV 25301
(304) 558.2981 x24

Wisconsin

Bureau of Public Health
1414 E. Washington Avenue
Madison, WI 53703
(608) 266.5817

Wyoming

Preventive Medicine Division, Department
of Health
Hathaway Building, 4th Floor
Cheyenne, WY 82002
(307) 777.6951

EPA Regional Lead Contacts

#	REGION	Regional Lead CONTACT
1	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	U.S. EPA Region 1 JFK Federal Building 1 Congress Street Boston, MA 02203 0001 (617)565 3836
2	New Jersey, New York, Puerto Rico, Virgin Islands	U.S. EPA Region 2 2890 Woodbridge Avenue Building 209, Mail Stop 225 Edison, NJ08837 3679 (732)321 6671
3	Delaware, Maryland, Pennsylvania, Virginia, Washington, D.C., West Virginia	U.S. EPA Region 3 (3WC33) 841 Chestnut Building Philadelphia, PA 19107 (215)566 2084
4	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee	U.S. EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303 (404)562 8998
5	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin	U.S. EPA Region 5 (DT 8J) 77 West Jackson Boulevard

		Chicago, IL 60604 3507 (312) 886 7836
6	Arkansas, Louisiana, New Mexico, Oklahoma, Texas	U.S. EPA Region 6 1445 Ross Avenue, 12th Floor Dallas, TX 75202 2733 (214) 665 7577
7	Iowa, Kansas, Missouri, Nebraska	U.S. EPA Region 7 (ARTD RAL1) 726 Minnesota Avenue Kansas City, KS 66101 (913) 551 7020
8	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming	U.S. EPA Region 8 999 18th Street, Suite 500 Denver, CO 80202 2466 (303) 312 6021
9	Arizona, California, Hawaii, Nevada	U.S. EPA Region 9 75 Hawthorne Street San Francisco, CA 94105 (415) 744 1093
10	Alaska, Idaho, Oregon, Washington	U.S. EPA Region 10 Toxics Section WCM 128 1200 Sixth Avenue Seattle, WA 98101 1128 (206) 553 1985