FACT SHEET: Protecting Public Health from Home and Building Fire Ash

California Environmental Protection Agency
Office of Environmental Health Hazard Assessment

Ash from burned structures may contain hazardous substances that can harm your health. All persons accessing burned structures should be aware of the hazards associated with those sites. Cleanup efforts may expose you to ash, soot, and fire decomposition products that may cause irritation and other health effects.

Ash from burned structures is generally more hazardous than forest ash. Fire ash contains tiny particles (dust, dirt, soot) that can be deposited on indoor and outdoor surfaces and can be inhaled if the ash becomes airborne. Although the ash is not classified as a hazardous waste, it may contain traces of hazardous substances such as metals like lead, cadmium, nickel and arsenic; asbestos from older homes or other buildings; perfluorochemicals (from degradation of non-stick cookware, for example); flame retardants; and caustic materials. For these reasons, it is advisable to be cautious and avoid exposure to the ash.

Health Effects of Ash: Fire ash may be irritating to the skin, nose, and throat, and may cause coughing. Fine particles can be inhaled deeply into lungs and may aggravate asthma and make it difficult to breathe. If the ash contains asbestos, nickel, arsenic or cadmium, then exposure is a particular concern because these substances can cause cancer. Because the substances in the ash vary, it is best to be cautious.

Sensitive People: People with asthma or other lung diseases, heart disease, pregnant women, and the elderly should exercise special caution because they may be more susceptible to health effects from the ash.

Children: Do not allow children to play in ash. Wash and clean all children's toys before using. Children should not be in the vicinity while cleanup is in progress. Even if you are careful, it is easy to stir up ash that may contain hazardous substances. In addition, the exploratory behavior of children may result in direct contact with contaminated materials.

Pets: Clean ash off house pets and other domesticated animals. Do not allow pets on contaminated sites.

Avoid direct contact with ash. If you get ash on your skin, in your eyes, or in your mouth, wash it off as soon as you can.

Clothing: Wear gloves, long-sleeved shirts, and long pants to avoid skin contact. Goggles are also recommended. Contact with wet ash may cause chemical burns or irritation on skin. Change your shoes and clothing prior to leaving the site to avoid tracking ash offsite, into your car, or other places.

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Masks: When exposure to dust or ash cannot be avoided, use a well-fitted NIOSH-certified air-purifying respirator mask, such as you can obtain at a hardware store. A mask rated N-95 or P-100 is much more effective than simpler dust or surgical masks in blocking particles from ash. Although smaller sized masks may appear to fit a child's face, none of the manufacturers recommend their use in children. If your child is in an area that warrants wearing a mask, you should remove them to an environment with cleaner air. Persons with heart or lung disease should consult their physician before using a mask during post-fire cleanup.

Cleanup: Ask your local authorities if it is safe for you to clean up your property and find out about any important recommendations or restrictions that they may have. Moving debris outside of the structural ash footprint may impact your eligibility for government-run cleanup. For more information, go to: Wildfire Debris Removal and Recovery Operation - CalRecycle Home Page

If you go to your property to recover possessions or clean up: Avoid disturbing or sifting through the ash as much as possible. Do not engage in activities that kick up ash particles and associated chemicals into the air. Gently sweep indoor and outdoor hard surfaces followed by wet mopping. A damp cloth or wet mop may be used on lightly dusted areas. When wetting down ash, use as little water as possible.

Do not bring ash back: Take care not to bring ash back to where you are staying. Wash your hands and change into clean clothes before you get into your car. Place clothing contaminated with ash in a plastic bag and seal it completely before putting it in the trunk of the car to keep ash out of the riding compartment.

Vacuum: Use a high-efficiency particulate air (HEPA)-type vacuum to clean dust-contaminated surfaces. Avoid using a typical household vacuum which will re-suspend the collected dust into the air. Shop vacuums and other common vacuum cleaners do not filter out small particles, but rather blow such particles out the exhaust into the air where they can be breathed. Do not use leaf blowers or take other actions that will put ash into the air.

Food and Water: Wash any home-grown fruits or vegetables from trees or gardens before eating. Avoid bringing other food to the site or eating at the affected site, or keep the food in a sealed container to prevent contamination and wash your hands well before eating. Consult with your drinking water provider to ensure the water is safe to drink.

Disposal: Collected ash may be disposed of in the regular trash. Ash may be stored in plastic bags or other containers that will prevent it from being disturbed. If you suspect hazardous waste including asbestos is present, contact your local hazardous waste authorities regarding appropriate disposal. Avoid washing ash into storm drains.

Other dangers: Other dangers may be present so pay attention to local advisories.

These may include lithium-ion batteries, including those in electric vehicles. See: Lithium-Ion Batteries After Wildfire.

For more information on wildfire smoke, ash, and debris removal see:

- California Environmental Protection Agency (CalEPA) Fire Response and Recovery | CalEPA
- CalRecycle Wildfire Debris Removal: Wildfire Debris Removal and Recovery Operation - CalRecycle Home Page
- Department of Toxic Substances Control (DTSC): Disaster-Related Hazardous Waste Removal | Department of Toxic Substances Control