

OSHA FactSheet

Mold

Molds are the most common forms of fungi found on earth. They can grow on almost any material, as long as moisture and oxygen are available. Most molds reproduce through the formation of spores, tiny microscopic cells that are resistant to drying and are released into the air. Airborne spores are found both indoors and outdoors. When spores land on a suitable moist surface, they begin to grow and release chemicals that digest and can eventually destroy the surface and underlying materials. Molds can also cause adverse health effects.

Health Effects of Mold Exposure

Molds can cause mild to severe health problems in sensitive individuals when a sufficient number of airborne spores are inhaled. Some individuals are far more sensitive than others. The most common health effects associated with mold exposure are allergic reactions. Symptoms may include:

- Sneezing
- Runny nose
- Eye irritation
- Cough
- Congestion
- Aggravation of asthma
- Dermatitis (skin rash)

People at Greatest Risk

Infants, children, and the elderly are more susceptible to health problems attributable to molds. In addition, people with the following underlying health conditions may be more sensitive to molds:

- Individuals with allergies or existing respiratory conditions including asthma, sinusitis, or other lung diseases.
- Individuals with a weakened immune system (e.g., HIV patients).
- Recent organ or bone marrow transplant patients.
- Patients recovering from recent surgery and receiving chemotherapy or long-term steroid treatment.

How to Recognize Mold

Mold may be recognized by:

- Sight – They usually appear as distinctly colored woolly mats (e.g., mildew is black and is one of the most common molds in a household).
- Smell – They often produce a foul odor, such as a musty, earthy smell.

Preventing Mold Growth

The key to mold prevention is moisture control. Mold will not grow if moisture is absent.

- Remove excess moisture with a wet-dry vacuum and dry out the building as quickly as possible (preferably within 24 to 48 hours).
- Use fans to assist in the drying process.
- Clean wet materials and surfaces with detergent and water.
- Discard all water damaged materials.
- Discard all materials visibly contaminated with mold.
- Remove and discard all porous materials that have been wet for more than 48 hours. Porous materials cannot be cleaned and may remain a source of mold growth. These materials include the following:
 - ◆ Carpeting and carpet padding;
 - ◆ Upholstery, wallpaper, drywall;
 - ◆ Floor and ceiling tiles, insulation materials;
 - ◆ Clothing;

- ◆ Leather;
- ◆ Paper, wood;
- ◆ Food.
- Homeowners may want to temporarily store items outside of the home until insurance claims can be filed.

General Cleanup Tips

- Make sure the working area is well ventilated.
- Place mold damaged materials in a plastic bag and discard.
- Clean mold off hard surfaces and other nonporous materials with detergent and water, and dry completely.
- Disinfect these cleaned surfaces with one of the following household bleach solutions:
 - ◆ $\frac{1}{4}$ cup household bleach per 1 gallon of clean water for light contamination.
 - ◆ $1\frac{1}{2}$ cups household bleach per 1 gallon of clean water for heavy contamination.

CAUTION: Do not mix bleach with other cleaning products that contain ammonia. Highly toxic chlorine gas can be produced.

- Avoid breathing mold spores. A N-95 respirator is recommended.
- Avoid touching mold with your bare hands. Long gloves that extend to the middle of the forearm are recommended. Use ordinary household rubber gloves when cleaning surfaces with water, bleach, and a mild detergent. Gloves made from natural rubber, neoprene, nitrile, polyurethane, or PVC are recommended if using a disinfectant, biocide, or strong cleaning solution.
- Avoid getting mold spores in your eyes. Goggles without ventilation holes are recommended.

Additional Information

Visit OSHA's Safety and Health Topics webpage on Molds and Fungi at <http://www.osha.gov/SLTC/molds/index.html>

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For more complete information:



U.S. Department of Labor

www.osha.gov

(800) 321-OSHA

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Molds are microscopic organisms found everywhere in the environment, indoors and outdoors. Most molds are harmless but some can cause infections, allergy symptoms and produce toxins. Inhalation is the exposure of most concern to cleanup workers.

Health Effects of Mold Exposure

- Runny nose • Eye irritation • Cough/congestion
- Sneezing • Skin rash • Aggravation of asthma

People at Greatest Risk of Health Effects

- Individuals with: a weakened immune system, allergies, asthma, sinusitis, or other lung diseases.

How to Recognize Mold

- Sight – Usually appear as colored woolly mats.
- Smell – Often produce a foul, musty, earthy smell.

General Mold Cleanup Recommendations

- Identify moisture problems and remove excess moisture with a wet-dry vacuum and dry out the building as quickly as possible.
- Make sure working area is well ventilated.
- Use fans to assist in the drying process.
- Clean wet items/surfaces with detergent and water.
- Work and egress areas should be cleaned with a damp cloth or mop and a detergent solution.
- Discard all water/mold damaged materials; discard mold damaged materials in plastic bags; discard all porous items that have been wet more than 48 hours.
- Disinfect surfaces with 1/2 cup household bleach in 1 gallon of water. **CAUTION: Do not mix bleach with cleaning products that contain ammonia.**
- Use approved respiratory protection.
- Use hand/eye protection (non-vented goggles).
- Wear long gloves made of material that will protect from chemicals used for surface cleaning.
- Wear protective clothing to prevent contamination and skin contact with mold and chemicals.
- Set up a decontamination area.
- Do not eat, drink, or smoke in work areas; avoid breathing dusts; after working, wash thoroughly, including hair, scalp and nails.

For more information:



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- Re-wet materials with a mist of water to suppress spores, dust and debris.
- Vacuum areas that are clean and dry with a HEPA vacuum.

Specific Remediation Tactics Based on Area Size

Small Areas of Mold Remediation (i.e., < 30 ft.²)

- The work area should be unoccupied.
- Recommend removing infants and persons recovering from surgery, with immune suppression, or respiratory health conditions from adjacent spaces.
- Wear non-vented goggles, gloves, and protective clothing such as disposable coveralls.
- Containment of the work area is not necessary.
- Cover surfaces in the work area that could become contaminated with secured plastic sheets.
- At a minimum, use a half-face or full-face N, R, or P-95 respirator.

Large Areas of Mold Remediation (i.e., 30-100 ft.²)

- The work area and areas directly adjacent to it should be unoccupied.
- Cover surfaces in the work area and in adjacent areas that could become contaminated and seal ventilation ducts/grills with secured plastic sheets.
- At a minimum, use a half-face or full-face N, R, or P-95 respirator.
- Wear non-vented goggles, gloves, and protective clothing such as disposable coveralls.
- If remediation is expected to generate a lot of dust or the visible concentration of mold is heavy, follow the extensive contamination procedures below.

Extensive and Visible Mold Contamination

- Develop a suitable mold remediation plan addressing: work area isolation, the use of exhaust fans with high-efficiency particulate air (HEPA) filtration, and the design of airlocks/decontamination room.
- At a minimum, use a half-face or full-face N, R, or P-100 respirator.
- Wear non-vented goggles, gloves, and protective clothing such as disposable coveralls. Ensure that protective clothing covers entire body including head and feet.
- Consult with experienced health and safety professionals prior to this level of remediation.

For more information:



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