



*See Tip Sheet “**The First 48 Hours**” for information on how to get started in a range of emergencies.*

MOLD IN COLLECTIONS

Overview

Mold can never be completely eliminated or “killed” and is managed through climate control, spore reduction, careful monitoring, and ongoing maintenance. Mold is “contagious,” and spores are spread through direct contact, air movement, and via air handling systems. Most commercial products (ex. Lysol, Thymol, and bleach) are ineffective on collections and can cause permanent damage. Mold growth is controlled by maintaining environmental conditions below 68°F and 55% relative humidity.

Personal Safety

Personal Protective Equipment (PPE) is very important when handling moldy material. Wear PPE at all times. Wear N95 or P100 disposable masks or reusable respirators with HEPA filters. Wear latex or nitrile gloves, replacing them regularly. Goggles without vent holes are recommended and should be cleaned regularly with alcohol. Wear hair covering. Clothes or Tyvek suits and booties should be removed when leaving the contaminated site. Discard Tyvek suits and booties, and wash clothes in hot water.

Isolate Unaffected Collections from Contaminated Collections

- Place unaffected collections in rooms with the best possible climate
- Wrap or box unaffected collections with the best available housing materials
- Plastic sheeting can be used to create “clean” rooms or separate spaces for work and storage, or to isolate clean items from contaminated objects

Cleaning Mold Spores

Mold spores must be physically removed as much as possible to limit later growth. Use caution when handling to avoid transferring or smearing mold. Commercial cleaning agents, fungicides, or bleach will only temporarily render mold dormant. These solvents are not recommended for use on collections without consulting professional conservators, as they may cause discoloration and physical damage.

If there is a consistent electricity supply, collections may be stored in refrigerators or freezers to slow mold growth until treatment can be completed. Do not store with food. Careful vacuuming of mold can be done with a variable-speed HEPA-filtered vacuum. Use the lowest setting sufficient to draw mold off of surfaces. Do not brush or scrub with the vacuum attachments.

Cleaning Steps (With or Without Electricity)

- Test several areas of each object to be cleaned for safety and for efficacy of cleaning techniques. Mold may soften organic materials, and abrasive action can further damage surfaces. Many media will be sensitive to water, alcohol, or solvents.
- Carefully clean objects, starting with the outermost surfaces and working towards the interior and more detailed areas of the object.
- Dab and lift mold spores off the surface using brushes, tools, swabs, or cloths. Try to avoid wiping, which will spread spores into a broader area, or pushing down into uneven surfaces.
- Soft bristle brushes, cotton pads or swabs, and small hand tools may be used to dislodge spores.
- Erasers (vinyl, gum, and rubber) may be cut smaller to lift spores, then discarded.
- Wash tools and brushes often during cleaning and at the end of the workday, preferably with alcohol.

Use Dilute Alcohol for Additional Cleaning, When Tested as Safe

- Test before using alcohol and/or water, which can cause media bleed or staining and additional mold staining.
- Ethyl and Isopropyl alcohols are available at pharmacies and hardware stores, and grain alcohol may be available at liquor stores. Carefully read product labels to ensure there are no other substances added that will harm collection objects.
- A solution of 30% water / 70% alcohol may be used. The ratio of water may be increased, diluting the alcohol further. Alcohol solutions may be applied with brushes, cotton cloths, cotton swabs, or sprayers.

Resources

National Park Service: Preservation Matters Series

Environmental Protection Agency (EPA) Personal Protective Equipment

Occupational Safety & Health Administration (OSHA) Mold Portal