
MOLD

A Conservator's Very Basic Mold Primer

from a very long conservation with Hillary Kaplan, 9/8/05

- **Mold can be anywhere**—it doesn't confine itself to certain materials, but certain conditions are most favorable for growth
 - **Moisture**
 - **Oxygen**
 - **Nutrients**
 - **Stagnant air** (allows undisturbed growth to flourish)
 - **Temperature** (impact varies with type of mold)
 - Mold can grow at temperatures near freezing.
 - Light will not inhibit growth.
 - Mold is directly linked to the air's moisture content, relative humidity.
- **Mold spores are everywhere.** We need not wonder if mold is in our environment, but be concerned if there is sustained growth.
- **Freeze to stop growth and buy time, but do not refrigerate.**
 - Objects take up moisture much more quickly than they release it.
 - Simply lowering the temperature without freezing raises the relative humidity and will introduce more moisture.
- **Addressing an outbreak:**
 - Ascertain that mold is present, not dirt or staining--mold digests nutrients and discharges byproducts seen as "staining."
 - Ideally, if possible, correct the source of the problem in the larger environment that led to mold. For large scale outbreaks, pre-conditioned, dehumidified incoming air and negative pressure HEPA-filtered outgoing air are needed to avoid contaminating other spaces and facilitate drying.
 - Consider:
 - Size and extent of the outbreak
 - State of mold
 - Active = wet and slimy; needs to be dried to be removed
 - Dormant = dry and powdery
 - Human resources
 - Financial resources
 - Technical knowledge and expertise
 - Nature of damaged items
 - Set priorities for response:
 - Immediately freeze to later dry and clean
 - Freezing does not kill, it just "buys time"
 - Dry if active mold present
 - Clean if dormant mold present
- **Health Issues:**
 - Treat all mold as potentially hazardous, as it can be for those hypersensitive to it.
 - Whether "dead" or "dormant" does not matter.
 - Products effective for eradicating mold also pose problems for the materials themselves, and/or for human safety.
 - Limit the amount of time spent cleaning for reasons of ergonomics, respiratory stress, and fatigue.
- **Level of Clean:**
 - Cleaning can begin once mold is dry.
 - There are no standards for protocols for cleaning mold.
 - Cleanliness will depend on the level of clean one can accept.
 - There may still be activity beneath the surface and on the surface of a porous material. It is nearly impossible to remove mold from hair.
 - Goal of cleaning is to offer gentle, yet effective removal.
 - Avoid driving mold further into a porous surface.
 - Avoid inadvertent cross-contamination.

- **Transport:**

- Use paper to isolate mold-damaged items in transit.
- Plastic can be used for short-term containment taking care not to create a micro-environment inside the enclosure that will result in additional mold growth.
- Use plastic for disposal.

- **Removal:**

- The most effective means of removing dry mold is to vacuum into a HEPA fitted vacuum (e.g., Nilfisk).
- Ideally, remediation occurs inside a properly vented fume hood—one designed to accommodate mold particulates, by a practitioner outfitted in appropriate personal protective equipment. Should this not be possible, consider working outdoors, upwind of the object. If no HEPA vacuum is available, brush or place ordinary vacuum exhaust in the direction of outdoor wind.
- It may be possible to photocopy records to preserve the information present.
- Quarternary ammonium salt solutions may be used to clean surfaces, shelving, and flooring. Do not use on the objects.

- **Summary**

- Moisture drives all mold growth; all moisture problems can become mold problems.
 - Dead does not matter; allergens and toxins remain.
 - Size does matter; larger areas of contamination require greater containment.
 - Health effects remain incompletely understood.
-