

NOTICE: This is a simple, general purpose manual for handling library materials based on our experience at the National Diet Library. When you handle rare books or severely damaged materials, we recommend you to consult an expert in conservation treatment.

Cleaning mold-damaged materials

Stroke off moldy substance attached to materials using disinfectant ethanol, and remove dirt with a vacuum cleaner or a brush.

1. Before starting

1-1. Ensure the safety of your body

To avoid intake and adhesion of molds, wear a mask (a commercially available dust mask), gloves (disposable thin plastic gloves), a lab coat, shoe covers, etc. Molds can cause allergy and other health hazards. So people in poor health should not engage in this work.



1-2. Isolate materials and prepare a workspace

Mold-affected materials must be isolated from other materials and stacks to prevent spreading contamination. Cleaning work must be done away from other materials and people, with good air circulation. Ethanol volatility requires extreme care on air circulation when you work indoors. If possible, use a cleaning aspirator or vacuum cleaner with a HEPA filter, and/or an air purifier. Outdoor work in good weather is also recommended.



HEPA (High-Efficiency Particulate Air) filter: filter with a mesh fine enough to trap mold spores

2. Stroking off moldy substance

Clean mold-affected parts with a paper towel soaked with ethanol (concentration of 70-80%). Give one-way strokes to avoid spreading dirt; do not rub. Always use the clean side of a paper towel, with the dirty side folded inwards.

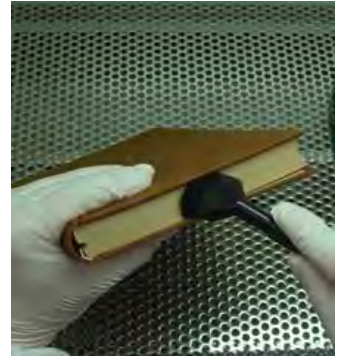


Note: Make sure to test an out-of-the-way corner to check to see if ethanol discolors the cover or ink.

3. Cleaning materials

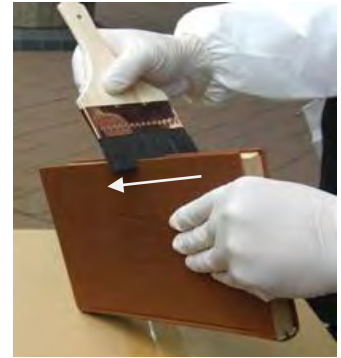
With a HEPA filter vacuum cleaner:

Cover the suction mouth with a coarse cloth or attach a special brush, and vacuum up remaining surface dirt. A vacuum cleaner with air volume control is preferable.



With a brush:

Brush away dirt if a vacuum cleaner is unavailable. Hold materials firmly to prevent dirt from getting inside the pages and brush downwind in the direction of an aspirator. Do this on the three edges.



4. Cleaning stacks

Wipe off bookshelves with a tightly squeezed wet rag, and then with an ethanol-wet paper towel in good ventilation. Do not forget to clean the floors around the shelves as well.



5. After cleaning work

Take off the mask and gloves gently, folding the outside inward to avoid molds scattering. Dispose of them in a sealed garbage bag.

Wash the brush/brush of a vacuum cleaner with neutral detergent and rinse them well. Soak the entire hairy part in disinfectant ethanol for 30 minutes. Drain it off and dry well.

6. Preventing a mold outbreak and recurrence

Environmental control is crucial to prevent a mold outbreak and recurrence. A mold outbreak is inhibited when the relative humidity around materials is under 60%; it is recommendable to install air dehumidifiers to avoid humid conditions, or to provide good air circulation by running fans. Clean materials and their storage space frequently to remove dust and dirt, which molds live on. When entering the stacks, wear footwear for exclusive use in stacks so as not to take dirt in. Checking materials regularly for early detection is also helpful in avoiding a mold outbreak.