

NATIONAL ARCHIVES AND RECORDS ADMINISTRATION PRESERVATION PROGRAMS

The information provided below is intended for emergency recovery and response, not general treatment recommendations.

MICROFILM

The following recommendations are for silver gelatin or silver halide microfilm only – not for diazo or vesicular microfilm.*

Priority Action:

- Deliver reels to a microfilm lab to be rewashed and dried within **48** hours.
 - Wet film must be kept wet until it can be reprocessed
 - Breakdown of the emulsion from the base film will begin immediately if the microfilm is allowed to dry
 - Film should not remain under water for more than three days

Recommendations:

- Do not move microfilm until a place has been prepared to receive it
- Do not remove wet microfilm from boxes – hold cartons together with rubber bands
- Pack wet film boxes into a container lined with plastic bags
- Add cool, clean, distilled water to make sure film stays wet
- Wipe outside of film boxes with a sponge before moving
- Keep identification labels with objects
- Do not let microfilm with mold damage stay wet
 - The emulsion of film that has had mold damage is soluble in water
 - Dry as best as is possible with a soft, lint free cloth, cheesecloth, or film cleaner
 - If mold infects silver gelatin-film, seek professional assistance
- Freeze dry deteriorated acetate reels immediately

Recommended Supplies:

- Distilled water
- Plastic bags
- Rubber bands
- Sponges

**Identifying Silver gelatin, diazo, and vesicular film*

- Silver gelatin (or silver halide) film is the film type used for master negative microforms, and is the only microform medium appropriate for archival purposes. The master silver-gelatin microfilm is almost always a negative image, from which positive or negative duplicates can be made. The duplicate negative or print master negative is also almost always silver gelatin film. The emulsion side of silver film is matte, while the non-emulsion side is glossy.

- Diazo – contains diazonium salts in the coating layer of the film. In the diazo process, film is exposed by contact printing from a master and makes an exact duplicate. Diazo film is available in a variety of colors, including black. It may have an acetate or polyester base. Processed black diazo resembles silver gelatin film but is glossy on both sides.
- Vesicular - In vesicular films, diazonium salt coating is sandwiched between two base layers. During processing, expanding nitrogen forms tiny bubbles (or vesicles) that remain when the film is cooled. The image is actually formed by these miniscule bubbles or "vesicles" inside the film itself. The image will always exhibit slightly raised areas. The film base is always polyester because acetate cannot tolerate the heat used in processing. Vesicular films tend to have a blue color when on the reel.

Salvage of diazo and vesicular film

- Remove from enclosures. Inspect diazo films for blistering and delamination. Handle by the edges without touching the emulsion. If damaged, and a copy exists, discard and replace with a print from the security copy
- In most cases, vesicular and diazo microfilm can be washed under cold fresh running water and air dried by laying out on absorbent materials emulsion side up or hanging vertically on a line
- If it is not possible to dry these film types immediately, keep them wet

See <http://www.nedcc.org/resources/leaflets/6Reformatting/01MicrofilmAndMicrofiche.php> for more information on microforms.

Contact information for selected professional microfilm processing labs:
<http://www.archives.gov/preservation/disaster-response/vendors.html>

The information and links provided by NARA are offered as a service and do not imply endorsement of any company, institution, or person. The scale of the emergency and types of materials affected will determine the specific actions or techniques to be taken and whether in house salvage is possible or whether external resources and expertise are necessary.