Books: Cloth or Paper Covers ❄

Priority

Freeze or dry within 48 hours. Freeze books to stabilize and prevent mold growth if there are a large number of books and/or the books are very wet.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Do not open or close books or remove covers until assessment is completed.
Oversized books need to be fully supported; if possible, move one at a time.

Equipment and Supplies

Air Drying: Water hose / Blotting paper or newsprint (un-inked) / Polyester, spunbond (Reemay or Hollytex) / Clothesline or heavy packing string / Extension cords / Dehumidifiers / Moisture meter / Fans
Freezing: Boxes / Freezer or waxed paper / Large plastic bags for lining cardboard boxes

Preparation for Drying

Books that are muddy should be rinsed before freezing, if possible. Keep the book closed and rinse mud off the exterior.

Drying Method (Air Drying)

Suitable for small quantities of books (up to 1000 volumes) that are not very wet.

To air dry books requires space with electricity in an area away from the disaster to set up books and fans. Lay newsprint, stand books upright on top or bottom edge, and gently fan pages open. The book covers will help support them to stand on their own. Replace the newsprint or blotting paper when it has absorbed moisture; remove wet newsprint from drying area to eliminate any source of additional humidity. Turn the books to stand on their opposite edge after partially dried.

String clothesline to lay pamphlets and small books across to air dry.

Oversize volumes must lay flat on blotting paper; replacing the paper when it becomes wet, and turning the volume. To wick moisture from the book, pages should be interleaved with sheets of un-inked newsprint or blotting paper that is changed as it becomes saturated. Check moisture content of volumes daily with moisture meter.

Keep the air moving at all times using fans; direct fans into the air and away from the drying records. Monitor temperature and humidity; use dehumidifiers as needed to maintain 50 % RH or lower.

Packing Method for Freezing

If air drying is not possible, books should be frozen within 48 hours, spine down in boxes.
Optional: Separate volumes by wrapping every other book with freezer or waxed paper.
Pack closely to prevent slouching or distortion.
Volumes packed with distortions may retain that distortion permanently if vacuum freeze drying.

Drying Method (Vacuum Freeze Drying)

Arrange to have frozen books vacuum freeze dried.

Use with Appendix 10, “Salvage at a Glance”
❄ = indicates that materials can be safely frozen
Adapted from various publications, including the “Minnesota History Center Emergency Preparedness Plan”
For questions regarding salvage of specific materials, please contact a conservator, or AIC CERT (202) 661-8068

Books: Leather or Vellum Covers ❄

Priority

Vellum covers should be frozen within 24 hours. **Leather covers** air dry or freeze within 24 hours.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Do not open or close books or remove covers until assessment is completed.
Oversized books need to be fully supported, if possible move one at a time.

Equipment and Supplies

Air Drying: Water hose / Blotting paper or newsprint (un-inked) / Polyester, spunbond (Reemay or Hollytex) / Extension cords / Dehumidifiers / Moisture meter / Fans
Freezing: Boxes / Large plastic bags for lining cardboard boxes / Freezer or waxed paper

Preparation for Drying

Do not rinse muddy books with **vellum covers**. Books with leather covers that are muddy should be rinsed before freezing, if possible. Keep the book closed and rinse off the exterior.

Drying Method (Air Drying)

Books with **leather covers** need to be watched carefully during the air drying process. Place blotting paper between the covers and text, and on the outside of the cover. As the text block dries, it should be weighted or put in a press. As the binding dries, it may shrink and cause damage to the text block, in which case it should be carefully removed before more damage is caused.

Keep the air moving at all times using fans; direct fans into the air and away from the drying records. Monitor temperature and humidity; use dehumidifiers as needed to maintain 50 % RH or lower.

Packing Method for freezing

Books with **leather and vellum covers** need to be separated using freezer paper or waxed paper. Books should be packed spine down in boxes; volumes packed with distortions will retain that distortion permanently if vacuum freeze drying.

Drying Method

Thermaline or cryogenic drying is a new technique that promises to be the best for leather and vellum bindings.

Books: Coated Paper ❄

Priority

Books with coated paper will become a solid block if wet pages are allowed to dry.
Freeze within six hours for subsequent vacuum freeze drying.
If damp, separate and air dry before items have an opportunity to dry or pages will fuse together.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Do not open or close books or remove covers until assessment is completed.
Oversized books need to be fully supported, it may only be possible to move one at a time.

Equipment and Supplies

Air Drying: Blotting paper or newsprint (un-inked) / Polyester, spunbond (Reemay or Hollytex) / Silicone release paper / Freezer or waxed paper / Extension cords / Dehumidifiers / Moisture meter / Fans
Freezing: Boxes / Large plastic bags for lining cardboard boxes / Freezer or waxed paper

Preparation for Drying

Muddy books should be rinsed before freezing if possible. Keep book closed and rinse mud off exterior.

Drying Method (Air Drying)

Do not try to air dry saturated books with coated paper. Air drying coated paper is only suitable for a very small number of books that are not very wet. It requires that every page be interleaved with a non-stick material such as silicone release paper, Polyester, spunbond (Reemay or Hollytex), or wax paper as the paper begins to dry.

To air dry books requires space with electricity in an area away from the disaster to set up books and fans. Lay out newsprint or blotting paper, set books upright and gently fan pages open. The book covers will help support them to stand on their own. Replace the newsprint or blotting paper when it has absorbed moisture; remove from drying area to eliminate any source of additional humidity. Turn the books to stand on their other edge.

It is difficult to air dry oversize volumes. They must lay flat on blotting paper, replacing the paper when it becomes wet, and turning the volume. Every page must be interleaved with water-absorbent, non-stick material.

Keep the air moving at all times using fans; direct fans into the air and away from the drying records.
Monitor temperature and humidity; use dehumidifiers as needed to maintain 50% RH or lower.

Packing Method for Freezing

Books should be frozen within 48 hours, spine down in boxes.
Optional: Separate volumes by wrapping every other book with freezer or waxed paper.
Pack closely to prevent slouching or distortion.
Volumes packed with distortions may retain that distortion permanently if vacuum freeze drying.

Drying Method (Vacuum Freeze Drying)

Arrange to have frozen books vacuum freeze dried. Coated paper is most successfully treated by this method; do not use vacuum thermal drying. Materials should not be allowed to thaw before vacuum freeze drying.

Use with Appendix 10, “Salvage at a Glance”
❄ = indicates that materials can be safely frozen
Adapted from various publications, including the “Minnesota History Center Emergency Preparedness Plan”
For questions regarding salvage of specific materials, please contact a conservator, or AIC CERT (202) 661-8068

Paper: Uncoated ❄

Priority

Paper (including archival records) with **stable media** should be air dried or frozen within 48 hours to prevent mold growth.
Paper (including archival records) with **soluble media (e.g., watercolors, felt, colored, ball point pens)** should be immediately frozen to arrest the migration of moisture that will feather and blur inks.
Maps and posters and other large sheets of wet paper should be frozen within 48 hours.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Paper is fragile when wet and can easily tear if unsupported while handling; move as little as possible.
Support can be given to single sheets by placing a piece of polyester film on top of the document. Rub the film gently and slowly lift the film while at the same time peeling off the top document in a diagonal direction. Lay the document flat; as it dries, it will separate from the surface of the film.

Equipment and Supplies

Air Drying: Polyester film / Blotting paper or newsprint (un-inked) / Polyester, spunbond (Reemay or Hollytex) / Screen (nylon) / Plastic sheeting / Plywood or masonite board / Plexiglas sheets / Clothesline or heavy packing string / Clothespins (rust proof) /Extension cords / Dehumidifiers / Monitors (temperature and humidity) / Fans
Freezing: Boxes / Large plastic bags for lining cardboard boxes / Freezer or waxed paper / Plastic sheeting / Plywood or masonite board / Plexiglas sheets / Shrinkwrap

Preparation for Drying

Maps and posters and other large sheets of wet paper require extra support when being separated and moved. If in flat files, sponge out any standing water and move materials in file drawers.
If paper is encapsulated or in L-sleeves, the polyester must be removed prior to air or freeze drying. Cut edges of the film between the item and the seal; roll back the top piece of polyester in a diagonal direction. If there are any apparent problems with the paper support, seek the assistance of a Conservator.
Framed or matted items must be removed from frames and mats prior to air or freeze drying. Do not freeze framed items. See: *Paper: Framed or Matted*

Drying Method (Air Drying)

Suitable for small numbers of documents which are damp or water-damaged around the edges. Place single sheets or small groups of records on paper-covered flat surfaces. Small groups of records can be fanned out to dry and turned at regularly to encourage evaporation. Replace the newsprint or blotting paper when it has absorbed moisture; remove from drying area to eliminate any source of additional humidity.

To maximize space utilization, small sheets of paper in good condition with stable ink can be hung from a clothesline.

Paper with **soluble media** should be dried face up. Do not attempt to blot the item as it may result in offsetting inks or pigments.

Maps and posters and other large documents can be air dried if space is available and the number of

items is small. Support items when relocating with plywood (covered with plastic sheeting) or Plexiglas sheets to prevent damage. To maximize space utilization, individual sheets of damp paper in good condition can be placed on screen (nylon) to allow air to circulate.

Keep the air moving at all times using fans; direct fans into the air and away from the drying records. Monitor temperature and humidity; use dehumidifiers as needed to maintain 50 % RH or lower.

Packing Method for freezing

Place documents in lined boxes vertically, if possible, interleaving every two inches of material with freezer or waxed paper. Keep foldered items together. If materials are in manuscript boxes, place in larger boxes for freezing.

Maps and posters and other large sheets of paper can be frozen in drawers from flat files. Pack flat sheets on plywood covered with plastic sheeting or Plexiglas sheets and wrap with shrinkwrap. Place rolled items horizontally in boxes lined with plastic sheeting.

Drying Methods

Vacuum Freeze Drying: Arrange to have frozen paper materials vacuum freeze dried. For materials in drawers, shipping may require building frames on pallets (palletizing). Materials should not be allowed to thaw during this process.

Dehumidification/Desiccant: Air Drying

Most appropriate when records are only slightly wet. This treatment can be done both on and off-site. Dry air is introduced, while continually removing moist air.

Paper: Coated ❄

Priority

Coated paper will become a solid block if wet sheets are allowed to dry.
If damp, separate and air dry before items have an opportunity to dry or sheets will fuse together. If many items or they are saturated, freeze immediately for subsequent vacuum freeze drying.
Large items on coated paper **(e.g., Maps and posters; Architectural or engineering drafting linens)** should be frozen immediately if possible.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Paper is fragile when wet and can easily tear if unsupported while handling; move as little as possible.
Support can be given to single sheets by placing a piece of polyester film on top of the document. Rub the film gently and slowly lift the film while at the same time peeling off the top document in a diagonal direction. Lay the document flat; as it dries, it will separate from the surface of the film.

Equipment and Supplies

Air Drying: Polyester film / Blotting paper or newsprint (un-inked) / Polyester, spunbond (Reemay or Hollytex) / Screen (nylon) / Plastic sheeting / Plywood or masonite board / Plexiglas sheets / Clothesline or heavy packing string / Clothespins (rust proof) /Extension cords / Dehumidifiers / Monitors (temperature and humidity) / Fans
Freezing: Boxes / Large plastic bags for lining cardboard boxes / Freezer or waxed paper / Plastic sheeting / Plywood or masonite board / Plexiglas sheets / Shrinkwrap

Preparation for Drying

Maps and posters and other large sheets of wet paper require extra support when being separated and moved from disaster site to triage area. If in flat files, sponge out any standing water, and move materials in file drawers.
If paper is encapsulated or in L-sleeves, the polyester must be removed prior to drying. Cut edges of the film between the item and the seal; roll back the top piece of polyester in a diagonal direction. Place rolled items horizontally in boxes lined with plastic sheeting.
Framed or matted items must be disassembled prior to air drying or freezing. See *Paper: Framed or Matted.*

Drying Method (Air Drying)

Air drying coated paper requires that every sheet be interleaved with a non-stick material such as silicone release paper, Polyester, spunbond (Reemay or Hollytex), or wax paper.

This requires space with electricity in an area away from the disaster to lay out newsprint or blotting paper, set up fans and dehumidifiers. Replace the newsprint or blotting paper when it has absorbed moisture; remove from drying area to eliminate any source of additional humidity.

To maximize space utilization, small individual sheets of paper in good condition with stable ink may be hung from a clothesline.

Maps and posters and other large sheets of coated paper can be air dried if space is available and the number of items is small. Support items when relocating with plywood (covered with plastic sheeting), or Plexiglas sheets to prevent damage when relocating. To maximize space utilization, individual sheets of damp paper in good condition may be placed on screen (nylon) to allow air to

circulate on both sides of the item.

Keep the air moving at all times using fans; direct fans into the air and away from the drying records. Monitor temperature and humidity; use dehumidifiers as needed to maintain 50 % RH or lower.

Packing Method (Freezing)

Papers (including archival records) placed in boxes, interleave every two inches of foldered material with freezer or waxed paper. If materials are in manuscript boxes; place in larger boxes for freezing.

Maps and posters and other large sheets of paper can be frozen in drawers from flat files. Pack flat sheets on plywood covered with plastic sheeting or Plexiglas sheets and wrap with shrinkwrap. Place rolled items horizontally in boxes lined with plastic sheeting.

Drying Method (Vacuum Freeze Drying)

Arrange to have frozen paper materials vacuum freeze dried. Coated paper is most successfully treated by this method; do not use vacuum thermal drying. For materials in drawers, shipping may require building frames on pallets (palletizing). Materials should not be allowed to thaw before vacuum freeze drying.

Paper: Framed Works on Paper

Priority

Framed and matted items must be disassembled prior to air drying or freezing. Wet paper must be frozen or air dried within 48 hours.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Caution must be exercised so as to not puncture or tear the wet paper artifact in the process of removing the frame, glass, and mounting materials.

Equipment and Supplies

Polyester, spunbond (Reemay or Hollytex) / Plastic sheeting / Plywood or masonite board / Plexiglas sheets / needle nose pliers / bubble wrap / microspatula

Preparation for Drying

Place frame face down on a smooth, flat surface covered with blotter paper or bubble wrap. Carefully remove dust seal and hardware (place any metal pieces in container so that they do not come in contact with the wet paper and inadvertently cause damage). Check if the paper object is adhered to the frame by gently pushing up on the glass to see that the assemblage will release without resistance. Place a piece of board (mat board, masonite, or Plexiglas) over the back of the frame with all contents still in place. Using two hands, invert frame assemblage as that the glass and image are facing up. Lift off the frame then lift off the glass.

When the paper is in direct contact with the glass, carefully remove them together and lay face down on a flat surface. Consult a Conservator if the paper is sticking to the glass.

If the glass is broken, the pieces may be held together with tape applied lightly over the breaks. The frame may then be laid face down and the paper removed from the back. If pieces of glass have dropped behind the remaining glass, hold the frame in a vertical position to remove the mat and/or paper.

To remove the item from its mat, place the image facing up. If possible lift window mat board and detach. If item has been hinged to the backing board, carefully cutting hinges to separate. If the object is attached firmly and directly to mat or backing board, do not attempt to remove. Support item, use Polyester, spunbond (Reemay or Hollytex) to move.

Drying Method

Once items are removed from frame or mat complete drying process as recommended for type of paper or format. SEE SECTIONS: Paper: Uncoated; Paper: Coated; Photographs: Prints.

CDs and DVDs

Priority

Immediately air dry discs. DO NOT FREEZE.
Exposure to water should not extend beyond 72 hours. If longer, refrigerate in plastic bags until cleaned.
Air dry or freeze paper enclosures within 48 hours.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Do not scratch surface.

Equipment and Supplies

Air Drying: Distilled water / lint-free cloth / dish drying rack (plastic covered) /nylon fishing line

Preparation for Drying

Remove discs from cases. Rinse discs with distilled water. Do not rub the discs because dirt could scratch. If necessary, blot with a soft lint-free cloth, from the inside oiut, not in a circular direction.

Drying Method (Air Drying)

Place vertically in a plastic covered dish drying rack to air dry.
Hang to dry in dust free environment by running nylon fishing line thru the center hole.

Drying Method (Paper Enclosures)

Once paper enclosures are removed from case; complete drying process as recommended for format.
SEE SECTIONS: Paper: Uncoated; Paper: Coated.

Magnetic Media: Computer

Priority

Pack in clean water for data recovery
Exposure to water should not extend beyond 72 hours. If longer, refrigerate in plastic bags until cleaned.
Contact a data recovery company DO NOT FREEZE.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Store disks upright without crowding, in cool, distilled water prior to data recovery.

Equipment and Supplies

Distilled water / plastic bags

Packing Method for Shipping

Pack wet disks in plastic bags and ship overnight to a computer media recovery service vendor for data recovery. Do not dry disks first; dried impurities can etch magnetic coating.

Data Recovery

If a back-up tape is available, it may be better to discard the damaged disk and make a new one from the back-up. If no back-up is available, send to a data recovery company for drying, cleaning, and copying. .

Magnetic Media: Video and Audio Cassettes

Priority

Air dry within 72 hours.
Contact a data recovery company.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Do not touch magnetic media.
Pack cassettes vertically into plastic crates or cardboard boxes.

Equipment and Supplies

Air Drying: Distilled water / fans / dehumidifiers / un-inked newsprint / blotting paper

Preparation for Drying

Often the case will keep tape clean and dry.
If the tape has water or particle damage, disassemble the case and remove tape. Rinse dirty tapes, still wound on reel, in clean distilled water.

Drying Method (Air Drying)

Support the reels vertically or lay the reels on sheets of clean blotter paper. Leave tapes next to their original cases.

Keep the air moving at all times using fans; direct fans into the air and away from the drying magnetic media. Use dehumidifiers as needed to maintain 50 percent RH; monitor temperature and humidity.

Drying Method (Paper Enclosures)

For paper enclosures complete drying process as recommended for format. SEE SECTIONS: Paper: Uncoated; Paper: Coated.

Data Recovery

Once dry, the tapes can be assessed for further cleaning and duplication by a specialized recovery service.

Magnetic Media: Reel-to-Reel Tapes

Priority

Air dry within 72 hours.
Contact a data recovery company.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Do not touch magnetic media; for reel-to-reel tapes handle by hubs or reels.
Pack vertically into plastic crates or cardboard cartons.
Don't put heavy weight or pressure on the sides of the reels.

Equipment and Supplies

Air Drying: Distilled water / fans/ dehumidifiers / un-inked newsprint / blotting paper

Preparation for Drying

Often contamination by water and other substances is mainly confined to the outermost layers of tape. Do not unwind tapes or remove from the reel.
In these cases, wash the exposed edges with distilled water.

Drying Method (Air Drying)

Support the reels vertically or by lay the reels on sheets of uninked newsprint or blotting paper.
Leave the tapes to dry next to their original boxes.

Keep the air moving at all times using fans; direct fans into the air and away from the drying magnetic media. Use dehumidifiers as needed to maintain 50 percent RH; monitor temperature and humidity.

Data Recovery

Once dry, the tapes can be assessed for further cleaning and duplication. This procedure is done by specialized professional vendors.

Microfiche ❄

Priority

Freeze or dry within 72 hours.

Handling Precautions

Do not move items until a place has been prepared to receive them.
If the fiche cannot be air dried immediately, keep them wet inside a container lined with garbage bags until they are frozen.

Equipment and Supplies

Air Drying – Fans / extension cords / dehumidifiers / monitors (temperature and relative humidity) / un-inked newsprint / clothesline / rust proof clips
Freezing – Boxes / plastic for lining boxes / plastic bags

Drying Method (Air Drying)

Fiche should be removed from the paper jackets to dry. Jackets should be retained to preserve any information printed on them, but this information should be transferred to new jackets once the fiche is dry and ready to be stored again.
The best air drying method is to clip the fiche to clotheslines with rust-proof clips. Monitor temperature and relative humidity; use dehumidifiers as needed to maintain 50% RH or lower.

Packing Method for Freezing

Place wet microfiche in plastic bags for freezing.
Materials should not be allowed to thaw prior to treatment or during shipment to treatment facility.

Drying Method (Vacuum Freeze Dry)

Fiche has been successfully vacuum freeze-dried, though freeze-drying of photographic materials is not widely recommended. If dealing with large quantities of fiche this option should be investigated.

Microfilm and Motion Picture Film

Priority

Rewash and dry within 72 hours.
Film must be kept wet until it can be reprocessed.
Contact a microfilm lab or film restoration lab to rewash and dry.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Wipe outside of film cans or boxes before opening. Cans that are wet on the outside may contain dry film that should be separated from wet material.
Do no remove wet microfilm from boxes; hold cartons together with rubber bands. Dry film in damp or wet boxes should be removed and kept together with the box.

Equipment and Supplies

Plastic bags / trays / boxes / plastic for lining boxes / sponges / rubber bands

Packing Method for Shipping

Pack wet film in plastic bags and ship overnight to a microfilm lab or film restoration lab.

Data Recovery

A microfilm lab or film restoration lab should be contacted to rewash and dry microfilm and motion picture film.

Paintings on Canvas

Priority:

High priority: Canvases shrink or expand when exposed to moisture or water, extremes of humidity, or drastic changes in temperature. This can cause the paint to "tent," flake, and separate from the canvas. Begin drying within 48 hours to prevent mold growth.

Handling Precautions:

Do not move items until a place has been prepared to receive them. Immediately remove paintings from water if submersed.

Carefully inspect the paint layer looking for any insecurity. If the paint layer shows any signs of flaking, tenting, or losses; leave it in a horizontal position and immediately call a conservator.

If the paint layer is secure, then the paintings can be transported vertically and dried.

If frame is unstable, remove from painting and label. Move to an area dealing with wood objects.

Equipment and Supplies

Air drying: Fans / dehumidifiers / ininked newsprint / blotting paper / cardboard

Damp Paintings and Air Drying:

Paintings that are damp and do not have flaking paint can be air dried; calling a conservator for immediate assistance is recommended.

Use fans to keep air moving in the room without blowing directly on the paintings. Monitor temperature and humidity; use dehumidifiers as needed to maintain 50% RH or lower.

Paintings can be dried face up on a table with blocks beneath each corner to promote air circulation, or paintings can be placed on blocks and leaned against a wall.

If paintings are to be stacked, place corrugated cardboard between paintings so painted surfaces do not touch another painted or any rough surface.

Wet Paintings and Blotter Drying:

Paintings that are wet but have no flaking or tenting paint can be dried with the blotter drying technique. Not many paintings will fall into this category; the best course of action is to immediately call a painting conservator.

Use fans to keep air moving in the room without blowing directly on the paintings. Monitor temperature and humidity; use dehumidifiers as needed to maintain 50% RH or lower.

On a flat surface prepare a bed of blotter paper or uninked newsprint, equal in thickness to the paint layer, with the top-most layer being a strong, clean Japanese tissue. Place painting, still on stretcher/strainer, face down on this surface.

Retain and tag all associated labels, parts and/or components that have detached from the painting or frame.

Cut blotter paper to the dimension of exposed canvas surface and place on back of painting. DO NOT PRESS DOWN WITH HANDS. Cut cardboard or other solid board and place on top of blotters. Add light weight to help maintain even contact of wet canvas and dry blotters. Stacks of books can be helpful.

Repeatedly change backing blotter, being careful not to create impressions in the canvas. Do not change facing materials.

When dry to the touch, remove blotters and pick up painting. If the facing tissue is still attached to the front, do not attempt to remove it. Contact a painting conservator.

Photographs: Prints ❄

Priority

In addition to salvaging based on curatorial priorities, salvage should be done in order of material fragility. A suggested order is as follows:

Carbon prints and Woodburytypes: the binders swell considerably, so dry or freeze these as soon as possible.

Dye transfer prints: Dyes can migrate so separate and dry these as quickly as possible. If transporting them keep them horizontal. DO NOT FREEZE.

Albumen prints, matte and glossy collodion prints, silver gelatin prints, and photomechanical prints: air dry or freeze within 48 hours.

Handling Precautions

Do not move items until a place has been prepared to receive them. Do not touch image.

Equipment and Supplies

Air Drying – Fans / extension cords / dehumidifier / monitors (temperature and relative humidity) / polyester spunbond (Reemay or Hollytex) / uninked newsprint / blotting paper / dish drying rack / clothesline / rust proof clips / microspatula

Freezing – Boxes / plastic for lining boxes / plastic bags

Preparation for Drying

Determine photographic format to assess damage. Large photographs require extra support when being separated and moved from disaster site to triage area. Carefully remove prints and film positives and negatives from their enclosures. Keep the enclosure or the file number with each film item if it contains vital information to maintain intellectual control.

Framed photographs should be unframed immediately. Check to be sure that the photograph is not adhered to the glass. While the photograph is face-up remove frame keeping glazing over face of photograph. Carefully and slowly lift the glazing away from the photograph's surface starting from one corner using a microspatula or like tool.

If the photograph appears to be stuck to the glass, do not attempt to remove it from the frame. Instead, dry it intact with the glass side down, and contact a photograph conservator for further assistance as soon as possible.

Drying Method

Order of preference: air dry, freeze/thaw and air dry, or vacuum freeze-dry. Do not vacuum thermal dry or freeze dry.

Air Drying

Dry prints between layers of spunbond polyester on clean absorbent blotter or lay prints emulsion side up (always) on a clean absorbent blotter.

Air Drying is suitable for most photographs. Keep the air moving at all times using fans directed away from the drying materials. Use dehumidifiers as needed to maintain humidity at or below 50% RH.

Freeze/thaw and air dry

Freezing of water-soaked photographic materials retards deterioration and allows time to prepare for further salvage efforts. **If possible,** photographs should be interleaved with wax paper to prevent sticking and placed in tightly sealed polyethylene bags. As time permits, frozen photographs can be systematically thawed and air-dried.

Conservator

Consult with a photograph conservator for any questions or problems.

Photographs: Cased Images

Priority

Ambrotypes, Pannotypes: Air Dry within 24 hours; DO NOT FREEZE; recovery rate is low
Daguerreotypes: Air Dry within 24 hours; DO NOT FREEZE
Tintypes: Air Dry within 24 hours; DO NOT FREEZE

Handling Precautions

Do not move items until a place has been prepared to receive them.
Handle with care - glass.
Do not dismantle case "sandwich" (brass protector, glass cover, brass matte, image) without training.

Equipment and Supplies

Air Drying: Boxes / bubble wrap / blotting paper / fans / dehumidifiers / monitors (temperature and relative humidity) / extension cords

Preparation for Drying

Carefully open the case and place the photograph face up on blotters. Determine photographic format of case image to determine treatment. Not all "cased images" have complete cases.
Do NOT attempt to disassemble the components, remove debris or wash the photograph. If the affected photo has water or debris trapped within the assemblage, contact a Conservator for proper disassembly.

Drying Method (Air Dry)

Ambrotypes, Pannotypes: Identify emulsion (usually against glass cover), and place on blotter paper emulsion side up. Air Dry on blotter paper in a container lined with bubble pack.
Daguerreotypes: Image is extremely fragile and can be damaged when removing from case "sandwich" without training. The slightest touch will erase a daguerreotype image; handle with extreme care! Air Dry on blotter paper in a container lined with bubble pack. Place on blotter paper image side up, in a dust free area with restricted access.
Tintypes: Identify emulsion (usually against glass cover), and place on blotter paper emulsion side up. Air Dry on blotter paper in a container lined with bubble pack.

Keep the air moving; direct fans into the air and away from the case images. Monitor temperature and relative humidity; use dehumidifiers as needed to maintain 50% RH or lower.

Conservator

Consult with a photograph conservator for any questions or problems.

Photographs: Color Slides and Film Positives ❄

Priority

Air Dry or freeze within 48 hours.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Do not touch emulsion; handle by mounts or edge of film.

Equipment and Supplies

Air Drying – Fans / extension cords / dehumidifier / monitors (temperature and relative humidity) / clothesline / rust proof clips
Freezing – Boxes / plastic bags

Drying Method (Air Dry)

Air dry **color slides (cardboard or plastic mounts) and film positives** by clipping edge to clothesline with rust proof clips; the drying area should not be dusty.

Keep the air moving; direct fans into the air and away from the images. Monitor temperature and relative humidity; use dehumidifiers as needed to maintain 50% RH or lower.

Packing Method for Freezing

Keep wet. Pack in plastic bags inside box.
Materials should not be allowed to thaw prior to treatment or during shipment to treatment facility.

Drying Method (Freeze – Thaw - Air Dry)

Color slides (cardboard or plastic mounts): Remove box of slides from freezer and air dry according to above method.
Color Film positives: Remove box of color film positives from freezer and air dry according to above method.

Drying Method (Freeze – Vacuum Freeze Dry)

Arrange to have frozen color transparencies Vacuum Freeze Dried.

Conservator

Consult with a photograph conservator for any questions or problems.

Photographs: Transparencies

Priority

Additive color transparencies (Autochromes, Agfacolor, Dufaycolor): Air Dry within 24 hours; DO NOT FREEZE; recovery rate is low.

❄ **Silver gelatin positives**: Air Dry or Freeze within 48 hours.

❄ **Color slides (glass mounts)**: Remove film positive from glass mount. Air Dry or Freeze within 48 hours.

❄ **Lantern Slides**: Freeze or dry within 48 hours

Handling Precautions

Do not move items until a place has been prepared to receive them.
Handle with care - paper binding holds positive image and glass cover together.

Equipment and Supplies

Air Drying – Fans / extension cords / dehumidifier / monitors (temperature and relative humidity) / dish drying rack /clothesline / rust proof clips / blotting paper / uninked newsprint
Freezing – Boxes / plastic for lining boxes / bubble pack or other packing material/ freezer, waxed, or silicone release paper / Polyester, spunbond (Reemay or Hollytex) / shrink wrap

Preparation for Drying

Determine photographic format of lantern slide to determine treatment.
Separate image from glass cover if water has penetrated the paper binding.

Drying Method (Air Dry)

Place on blotting paper emulsion side up.
Keep the air moving; direct fans into the air and away from the images. Monitor temperature and relative humidity; use dehumidifiers as needed to maintain 50% RH or lower.

Packing Method for Freezing

Pack vertically in padded strong boxes; be sure box is not too heavy.
DO NOT FREEZE **Additive color transparencies (Autochromes, Agfacolor, Dufaycolor)**
Materials should not be allowed to thaw prior to treatment or during shipment to treatment facility.

Drying Method (Freeze – Thaw - Air Dry)

Silver gelatin positives, Color slides (glass mounts), Lantern Slides: Remove box of slides from freezer and air dry according to above method.

Conservator

Consult with a photograph conservator for any questions or problems.

Photographs: Negatives

Priority

Wet Collodion Glass Plate Negatives: Air Dry within 24 hours; DO NOT FREEZE.
❄Gelatin Dry Plate Glass Negatives: Air Dry or Freeze within 48 hours.
❄B&W or Color polyester-based film; nitrate and acetate negatives: Air Dry or Freeze with 48 hours.

Handling Precautions

Do not move items until a place has been prepared to receive them. Handle glass negatives with care. Do not touch emulsion; hold negatives by the edge of the glass or film.

Equipment and Supplies

Air Drying – Fans / extension cords / dehumidifier / monitors (temperature and relative humidity) / dish drying rack /clothesline / rust proof clips
Freezing – Boxes / plastic for lining boxes / large flat supports such as bread trays or pieces of plywood / freezer, waxed, or silicone release paper / Polyester, spunbond (Reemay or Hollytex) / shrink wrap

Preparation for Drying

DO NOT WASH **Wet –Collodion Glass Plate Negatives** or any negatives that have been exposed to mold. Remove paper envelopes prior to air drying; cut information from envelope and keep with negative.

Drying Method (Air Drying)

Wet Collodion Glass Plate Negatives: Air dry immediately. Place glass (emulsion side up) on blotting paper / uninked newsprint; or stand in dish drying rack, emulsion must not touch support.
Gelatin Dry Plate Glass Negatives: Air dry immediately. Place glass (emulsion side up) on blotter paper, or stand in dish drying rack, emulsion side must not touch support.
B&W or Color Polyester-based film, Nitrate and Acetate Negatives: Place on blotting paper or uninked newsprint emulsion side up. Clipping edge of negative to clothesline with rust proof clips; the drying area should not be dusty.
Keep the air moving at all times using fans; direct fans into the air and away from the negatives.
Monitor temperature and RH; use dehumidifiers as needed to maintain 50% RH or lower.

Packing Method for Freezing

Wet Collodion Glass Plate Negatives: DO NOT FREEZE
Gelatin Dry Plate Glass Negatives: Pack vertically in padded plastic crates.
B&W or Color Polyester-based film, Nitrate and Acetate Negatives: Keep wet; pack in plastic bags inside box. Materials should not be allowed to thaw prior to treatment or during shipment to treatment facility.

Drying Method (Freeze – Thaw - Air Dry)

Gelatin Dry Plate Glass Negatives: Remove box of slides from freezer and air dry according to above method.
B&W or Color Polyester-based film, Nitrate and Acetate Negatives: Remove box of slides from freezer and air dry according to above method.

Drying Method (Freeze – Vacuum Freeze Dry)

Arrange to have **B&W or Color Polyester-based film, Nitrate and Acetate Negatives** Vacuum Freeze Dried. Do not freeze dry glass negatives.

Conservator

Consult with a photograph conservator for any questions or problems.

Record Albums: Shellac, Acetate, and Vinyl

Priority

Dry within 48 hours at ambient temperature away from direct heat and dust.
Freezing is untested; if there are not options, freeze at above 0 degrees F.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Hold disks by their edges. Avoid shocks.
Use caution in removing wet paper next to discs.

Equipment and Supplies

Air Drying – Grease pencil / photo big trays /Kodak Photo Flo / distilled water / dish drying rack (plastic covered) / fans / extension cords / dehumidifier / monitors (temperature and relative humidity) / freezer, waxed, or silicone release paper / Polyester, spunbond (Reemay or Hollytex)
Freezing – Boxes / plastic for lining boxes / freezer, waxed, or silicone release paper / Polyester, spunbond (Reemay or Hollytex) / shrink wrap

Preparation for Drying

Remove the discs from their sleeves and jackets. If labels have separated, mark label information on the center of the disk with a grease pencil and keep track of the label.

Discs that are broken or have any chips that expose inner layers should not be rinsed.

If dirt has been deposited on the disks, wash in a 1 percent solution of Kodak Photo Flo in distilled water. Rinse each disk thoroughly with distilled water.

Each disc format should be washed in it own container (i.e., DO NOT wash shellac discs with vinyl discs.

Drying Method (Air Drying)

Place discs in dish drying rack allowing for free circulation of air.

Keep the air moving at all times using fans; direct fans into the air and away from the drying records.
Monitor temperature and relative humidity; use dehumidifiers as needed to maintain 50% RH or lower.

Packing Method for Freezing

Pack vertically in padded plastic crates.
Materials should not be allowed to thaw prior to treatment or during shipment to treatment facility.

Drying Method (Freeze – Thaw - Air Dry)

Remove box of discs from freezer and air dry according to above method.

Drying Method (Jackets, Sleeves, and Labels)

Jackets, sleeves, and labels may be air dried or frozen like other paper materials. SEE SECTIONS: Paper Uncoated; Paper Coated.

Use with Appendix 10, “Salvage at a Glance”
❄ = indicates that materials can be safely frozen
Adapted from various publications, including the “Minnesota History Center Emergency Preparedness Plan”
For questions regarding salvage of specific materials, please contact a conservator, or AIC CERT (202) 661-8068

Scrapbooks and Photograph Albums

Priority

Freeze or air dry scrapbooks and photograph albums immediately.

Handling Precautions

Do not move items until a place has been prepared to receive them.
Large scrapbooks and photograph albums should be supported with boards.
Wet pages are vulnerable to tearing; support with spun polyester or blotting paper to turn pages.

Equipment and Supplies

Air Drying – Fans / extension cords / dehumidifier / monitors (temperature and relative humidity) / moisture meter / freezer, waxed, or silicone release paper / Polyester, spunbond (Reemay or Hollytex).
Freezing – Boxes / plastic for lining boxes / large flat supports such as bread trays or pieces of plywood / freezer, waxed, or silicone release paper / Polyester, spunbond (Reemay or Hollytex) / shrink wrap

Drying Method (Air Dry)

Air drying may be used for small quantities of scrapbooks or photo albums which are only damp or water-damaged around the edges. The books should not have large amounts of coated paper or soluble adhesives.

Interleave scrapbook pages with uninked newsprint or blotting paper. The interleaving and turning the supported pages regularly will contribute drying. If the binding has failed, it may be advisable to separate the pages and lay them out individually to dry. Care must be taken to maintain page order.

Photograph albums need to be interleaved with a sandwich of spun polyester / blotting paper / spun polyester between each leaf. This will prevent photographic emulsion from adhering to other images, or paper. Change the blotter paper as it becomes damp or wet. If the binding structure is no longer intact or the album can be dismantled, separate the leaves and air dry on spun polyester and blotting paper; periodically turn promote even drying.
Keep the air moving at all times using fans; direct fans into the air and away from the drying records.
Monitor temperature and relative humidity; use dehumidifiers as needed to maintain 50% RH or lower.

Packing Method for Freezing

If the binding is no longer intact, wrap in shrink wrap.
Packed flat in shallow boxes or trays lined with plastic.
Materials should not be allowed to thaw prior to treatment or during shipment to treatment facility.

Drying Method (Freeze – Thaw - Air Dry)

Preferred method for treatment of large quantities of photograph albums
Remove box of scrapbooks or photograph albums from freezer and air dry according to above method.

Drying Method (Vacuum Freeze Drying)

Vacuum freeze drying is the preferred method for scrapbooks. If air drying is not possible due to media solubility or unacceptable disruption to the structural integrity of the volume, vacuum freeze drying is recommended. Vacuum freeze drying is not recommended for photographs.

Vellum and Parchment Documents

Priority

Dry immediately.
Do not freeze dry gilded or illuminated manuscripts

Handling Precautions

Do not move items until a place has been prepared to receive them.

Equipment and Supplies

Air Drying: Boxes / board / plastic / clips / weights / blotting paper / fans / dehumidifiers / monitors (temperature and relative humidity) / extension cords

Drying Method (Air Drying)

Drying must take place slowly and be carefully controlled. The item needs to be restrained as it dries for it to retain its shape. The edges should held in place by clipping the document to a plastic covered board or by placing weights at the edges. As it dries, it should be checked at least every 15 minutes and the tension adjusted as necessary. Once the item is almost dry, the clips or weights can be removed and the item should be placed between blotters and weighted overall to complete drying.
Keep the air moving at all times using fans; direct fans into the air and away from the drying records.
Monitor temperature and relative humidity; use dehumidifiers as needed to maintain 50% RH or lower.

Packing Method Freezing

Freeze only as a last resort. Interleave spunbond polyester between documents; pack documents flat.
Materials should not be allowed to thaw prior to treatment or during shipment to treatment facility

Drying Method Freezing

Thermaline or cryogenic drying is a new technique that shows promise for vellum and parchment.
Vacuum freeze drying is to be avoided, Freeze drying is a last resort for drying vellum and parchment; likely to have distortion and change in the object.

Conservator

Consult with a conservator for any questions or problems.

Organic Material: Bone, Ivory, Shell, Skin, Leather, Basketry

Priority

Organic objects are very susceptible to damage by water and should be a high priority. They are often hydroscopic and can warp, crack, shrink, and distort when they take on moisture and if they are dried too rapidly. Begin dying within 48 hours to prevent mold growth.

Handling Precautions

Handle with care – wet objects may be fragile. Baskets should be lifted from the bottom.
Do not move items until a place has been prepared to receive them. Table surfaces should be prepared with a clean protective cover such as polyethylene sheeting, white blotters with spun polyester web overlay, clean white sheets, or clean white towels.

Equipment and Supplies Needed

plastic sheeting or bags / clear water / sponges, clean towels, paper towels or unprinted newsprint / fans / pallets or lumber / portable dehumidifier

Preparation for drying

Rinse or sponge with clear water to remove mud or dirt before drying.

Drying Method (Air Drying)

Air Dry slowly, using fans to keep air moving without blowing directly on the pieces. Raise items off the floor on trestles, pallets, or lumber to allow air to circulate underneath the items.

Baskets, skin and leather objects can be padded with toweling to maintain shape and provide support.

Use portable dehumidifiers to slowly remove moisture from the area/objects. Bring relative humidity down to 50%.

Inorganic Material: Ceramic, Glass, Metal, and Stone

Priority

Objects such as glass, ceramics, and metals are more resistant to water damage, and brief periods of contact should not cause long term damage. Some exceptions to this are iron, which corrode quickly, and unfired and low-fire ceramics, which are porous. Separate these objects from those that do not require immediate attention. Sun baked ceramics or terracotta should be air dried within 24 hours to prevent disintegration and loss of surface.

Handling Precautions

Do not move items until a place has been prepared to receive them. Handling precautions should be based on the fragility of the material (water or wetness has little to no bearing).

Equipment and Supplies Needed

Heater or hair dryer / clear water / sponges, clean towels, paper towels or unprinted newsprint / fans / pallets or lumber / portable dehumidifier

Preparation for drying

Rinse or sponge with clear water to remove mud or dirt before drying.

Drying Method (Air Drying)

Sponges, clean towels, paper towels, or unused newsprint may be used to absorb excess moisture. Exchange wet for dry blotting material at least daily until items are dry. Check for mold growth.

Examine for instabilities in applied finishes. If applied finishes are secure, blot, do not rub surfaces.

Air dry, using fans to keep air moving without blowing directly on the pieces. Raise items off the floor on trestles, pallets, or lumber to allow air to circulate underneath the items.

Metal objects can be dried with moderate heat (90-100°F in an oven or using a heather or hair dryer)

Use portable dehumidifiers to slowly remove moisture from the area/objects. Bring relative humidity down to 50%.

Textiles

Priority

Dry archaeological textiles and textiles with bleeding dyes as quickly as possible, all other textiles within 48 hours to prevent mold growth.

❄ Textiles can be frozen as long as they are not composite materials with materials that cannot be frozen, such as beadwork, painted surfaces, boning, etc.

Handling Precautions

Do not move items until a place has been prepared to receive them. Handle wet textile objects only when necessary and as little as possible because textile materials are weaker when wet and can be easily damaged or torn. Be particularly careful with wet archaeological textiles, which can be extremely weakened by contact with water. It is important to support wet textile objects thoroughly when moving them, either on a solid support or in a sling made from a length of fabric, because the added weight of the water increases the possibility of damage. Wet hanging costumes should be carried on a sling and not re-hung. Be sure that all identifying information, such as accession number tags, is retained with the objects, and label any parts that become detached. If it is possible to do so without excessive handling, remove all wet packing materials such as cardboard and tissue from contact with the textiles.

Textile objects often have associated non-textile materials such as metal and leather. See the salvage instruction sheets for these materials, keeping in mind that the textile component will probably be the most vulnerable.

Equipment and Supplies Needed

polyethylene sheeting / terry cloth toweling / blotters / sponges / cheesecloth / muslin or boards for carrying

Preparation for drying

A large area is needed to dry wet textiles, as they cannot be placed on top of each other. Clean floor space can be used. Table and floor surfaces should be covered with clean polyethylene sheeting, and then with clean blotters or other absorbent materials. Fans can be used to increase air circulation and speed drying; place them so that air flow goes across the surface of the textiles for optimal drying.

Drying Method (Air Drying)

Quick drying is essential for best recovery of wet textile objects. Excess water can be removed from very wet textiles in good condition by gentle blotting with sponges. Absorbent materials such as blotters or terry cloth toweling should then be placed on top of the objects, removed when saturated, and replaced with dry ones. When the textiles have dried to an appreciable level, they can be gently handled to open out folds and expose new areas to the air. Costumes can be padded out slightly with acid-free tissue, polyester batting, or nylon tulle to speed drying and prevent creasing.

Textiles with bleeding dyes should be dried first and as quickly as possible; use absorbent materials to remove as much water as possible. Concentrate drying activity on the areas that are bleeding so that they will dry before the surrounding areas; hair dryers on low heat can be used. Cover the textile with cheesecloth and leave the cheesecloth undisturbed until the textile is completely dry.

Wood

Priority

Begin drying within 48 hours to prevent mold growth. Polychrome objects require immediate attention.

Handling Precautions

Do not move items until a place has been prepared to receive them. Lift from the bottom of an object: tables from the apron; chairs by the seat rails, not by the arms, stretchers, slats, headpiece or crest rails; trunks from the bottom, etc.

Partially wetted objects can be packed with dry blotting materials such as unlinked newsprint or blotters to remove as much moisture as possible. Thoroughly wet, unpainted objects should be wrapped with blotting materials, then wrapped in polyethylene sheeting to retain as much moister as possible, since fast drying will cause irreversible damage.

Equipment and Supplies Needed

polyethylene sheeting / soft bristle brush / wooden spatula / sponges, clean towels, paper towels or unprinted newsprint / fans / pallets or lumber / portable dehumidifier

Preparation for drying

Rinse or sponge with clear water to remove mud or dirt before drying. Be careful not to wipe or scour as grit will damage remaining finish. Use a soft bristle brush to clean carvings and crevices. If mud has dried, dampen with a sponge and remove with a wooden spatula; rinse. Remove wet contents and paper liners from drawers and shelves.

Drying Method (Air Drying)

Absorb excess moisture with sponges, clean towels, paper towels, or unprinted newsprint. Blot, do not wipe, to avoid scratching the surface.

Air dry, using fans to keep air moving without blowing directly on the pieces. Tent the objects with polyethylene sheeting to slow the drying. Raise items off the floor on trestles, pallets, or lumber to allow air to circulate on all sides. Open doors and drawers slightly to allow air to circulate inside the items.

Use portable dehumidifiers to slowly remove moisture from the area and objects. Drying quickly will cause warping and cracking. Bring relative humidity down to 50-55%.