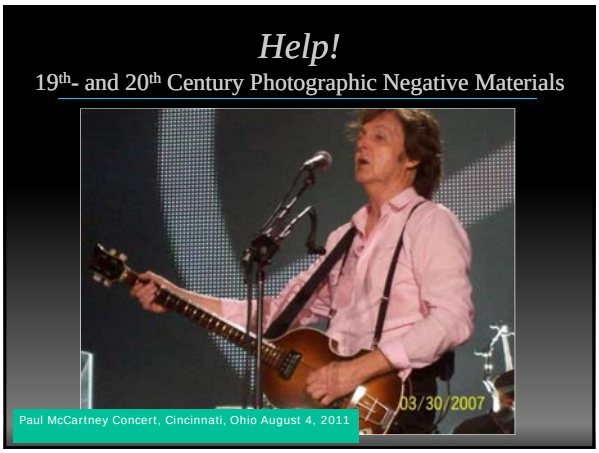
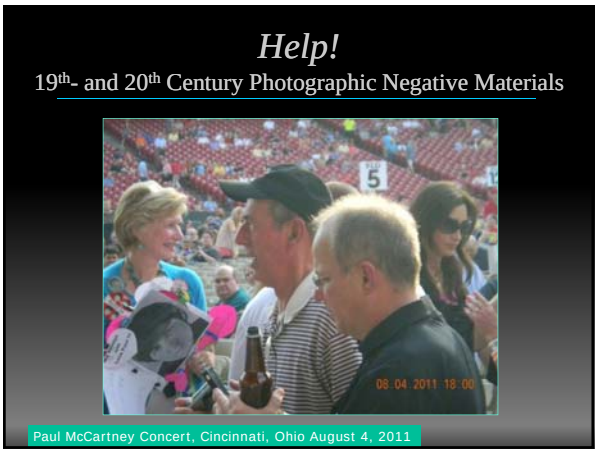

Help!
19th- and 20th Century Photographic Negative Materials
03/30/2007
Paul McCartney Concert, Cincinnati, Ohio August 4, 2011


Help!
19th- and 20th Century Photographic Negative Materials
08.04.2011 18:00
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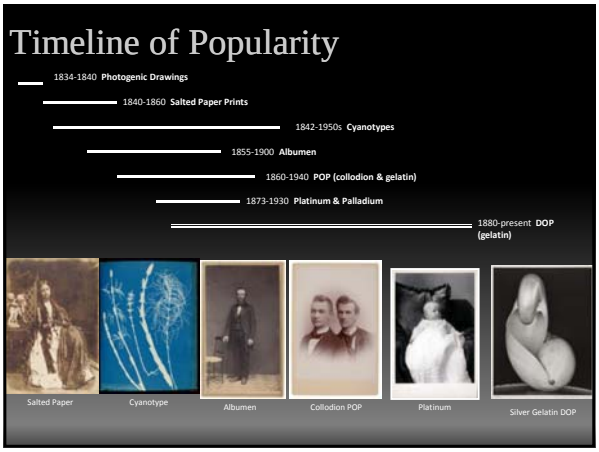
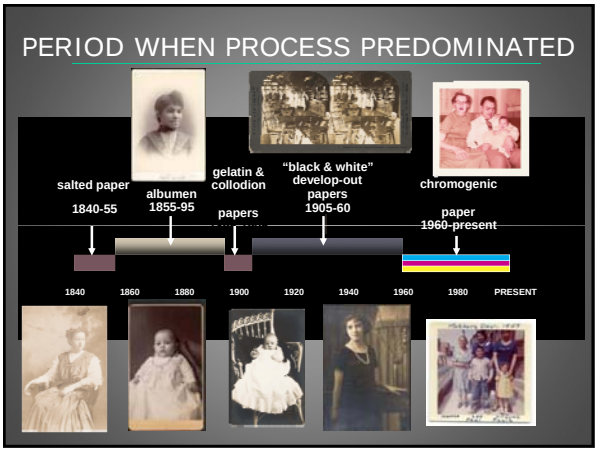
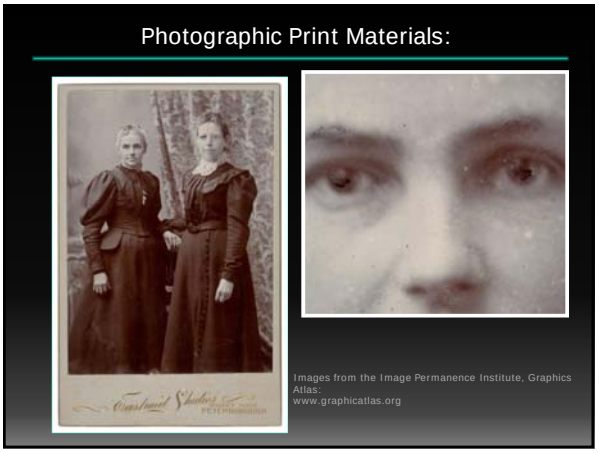

Timeline of Popularity
1834-1840 Photogenic Drawings
1840-1860 Salted Paper Prints
1842-1950s Cyanotypes
1855-1900 Albumen
1860-1940 POP (collodion & gelatin)
1873-1930 Platinum & Palladium
1880-present DOP (gelatin)
Salted Paper
Cyanotype
Albumen
Collodion POP
Platinum
Silver Gelatin DOP


PERIOD WHEN PROCESS PREDOMINATED
salted paper
1840-55
albumen
1855-95
gelatin & collodion papers
"black & white" develop-out papers
1905-60
chromogenic paper
1960-present
1840
1860
1880
1900
1920
1940
1960
1980
PRESENT


Photographic Print Materials:
Tarlton Law Library, University of Texas School of Law


Photographic Print Materials:
Images from the Image Permanence Institute, Graphics Atlas:
www.graphicatlas.org

Photographic Print Materials:

Anonymous
Silver Gelatin Developing-Out Photograph
Private Owner

Photographic Print Materials:

Photograph Process Identification – Review

- Surface sheen
- Image tonality
- 30X magnification
- Mounting style
- Image fading
- Binder layer cracking
- Binder abrasion

Image from the Image Permanence Institute, Graphics Atlas: www.graphicatlas.org

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- Surface sheen
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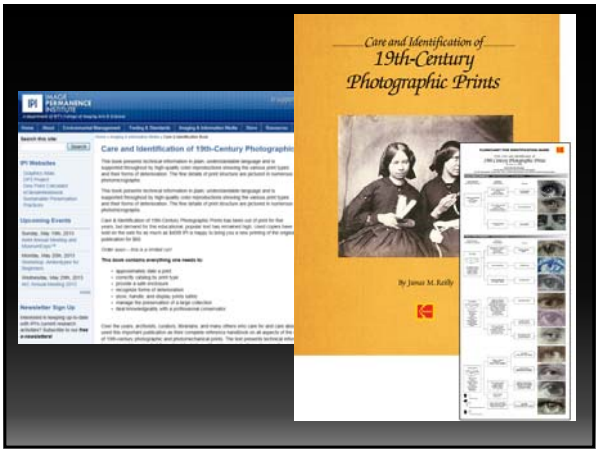
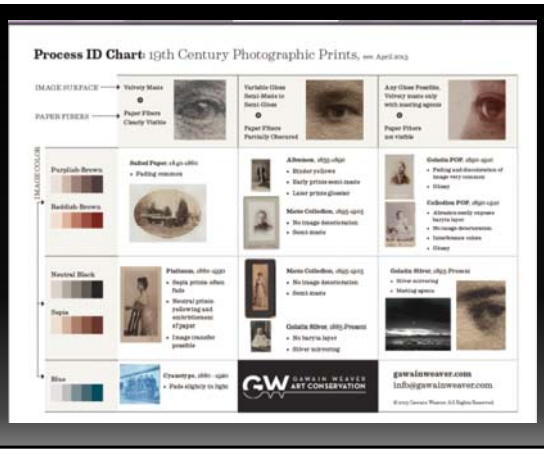
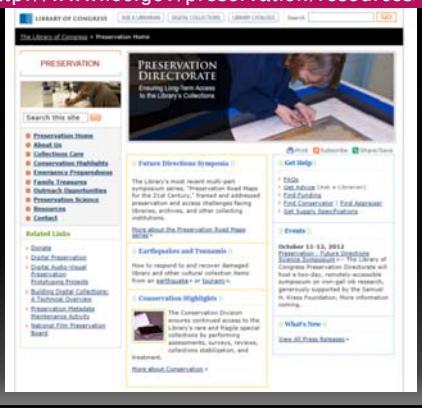
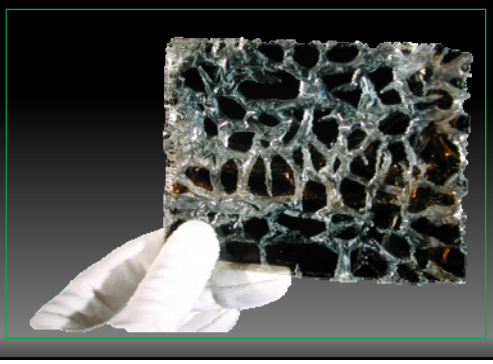




http://www.loc.gov/preservation/resources



An Overview of Negative Materials



Glass Plate Negative ca 1910 (MO State Penitentiary Inmate Mugshot).jpg
Missouri State Archives

https://www.imagepermanenceinstitute.org/webfm_send/302

By María Fernanda Valverde

The Ideal Material:

- Transparent support
- Highly photosensitive
- Sensitive to all colors
- Ready-to-use photo-sensitive layer
- Lightweight and flexible
- Chemically and dimensionally stable

Calotype negative, Hill & Adamson (Scottish, active 1843-1848), [Two Newhaven Fisherwomen], ca. 1845, 21.3 x 15.8 cm (8.375 x 6.25 in.). Gift of Georgia O'Keeffe, George Eastman House Collection.

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[positive] from a calotype negative, Hill & Adamson (Scottish, active 1843-1848), [Two Newhaven Fisherwomen], ca. 1845, 21.3 x 15.8 cm (8.375 x 6.25 in.). Gift of Georgia O'Keeffe, George Eastman House Collection.

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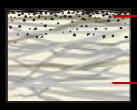
Negatives need a transparent support



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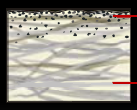
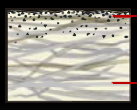
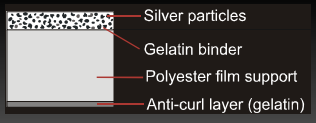
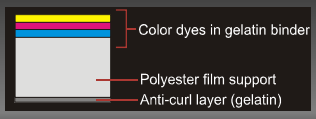


Negatives need a transparent support







History of Negative Materials

- 1841 - 1865 Paper Negative

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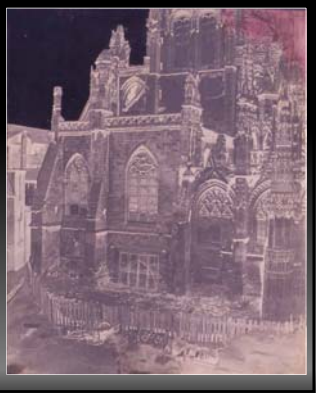
- 1841 - 1865 Paper Negative
- 1851 - 1885 Collodion on Glass Negative
- 1878 - 1925 Gelatin Dry Plate Negative

History of Negative Materials

- 1841 - 1865 Paper Negative
- 1851 - 1885 Collodion on Glass Negative
- 1878 - 1925 Gelatin Dry Plate Negative
- 1889 - 1950 Cellulose Nitrate Film Negative
- 1925 - today Cellulose Acetate Film Negative
- 1955 - today Polyester Film Negative

Paper negatives: 1841-1855

- Paper support made transparent with wax
- Used with the salted paper process
- Relatively rare
- Silver image –may fade



The Use of Glass as a Support

The Use of Glass as a Support

Collodion on Glass: 1851- 1885

Collodion on glass negative
Mathew B. Brady (American, 1823-1918). ANNIE LEWIS, ca. 1868. 20.3 x 25.4 cm (8 x 10 in.). George Eastman House Collection.

Collodion on Glass: 1851- 1885

[positive] Collodion on glass negative
Mathew B. Brady (American, 1823-1918). ANNIE LEWIS, ca. 1868. 20.3 x 25.4 cm (8 x 10 in.). George Eastman House Collection.

Collodion on Glass: 1851- 1885

- Often printed with Albumen paper

Gelatin Dry Plate

Provided by North Carolina Museum of Natural Sciences

Gelatin Dry Plate:1880-1925

- Smooth surface
- Machine cut
- Black and white
- May fade and discolor
- Gelatin deterioration

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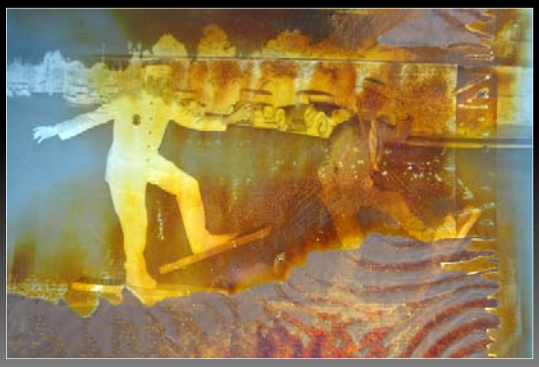
Arts and Industries Building, early 20th century, Smithsonian Institution Archives, gelatin dry plate negative

Lantern Slides

Lantern Slide n.d. (Mark Twain & Hannibal MO).JPG
Missouri State Archives

Cellulose Nitrate Film



Cellulose Nitrate Film Base

Cellulose Nitrate Film – 1889-1950

- Transition from glass plates 1890 – 1920
- First flexible film support
- Light, durable
- Formats vary

Cellulose Nitrate Film Negative (reverse image), Smithsonian Institution Archives

Cellulose Nitrate Film

Deterioration

- Base becomes brittle and discolors
- Gelatin becomes soft
- Silver image fades and discolors

Cellulose Nitrate Film

Stages of Deterioration

Stage 1. No deterioration

Lieutenant Rex V. Bixby in Uniform, US Army, WWI, Cellulose Nitrate Negative, Library of Congress

Cellulose Nitrate Film

Stages of Deterioration

Stage 1. No deterioration

Stage 2. The negatives begin to mirror and yellow

Desert, Cellulose Nitrate Negative, Dr. Rose Desert Flora Collection, Smithsonian Institution Archives

Palm Trees, Dr. Rose Desert Flora Collection, Smithsonian Institution Archives

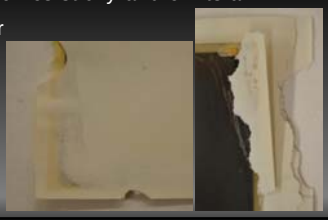
Cellulose Nitrate Film

Stages of Deterioration

Stage 1. No deterioration

Stage 2. The negatives begin to mirror and yellow

Stage 3. The film becomes sticky and emits a strong order



Nitrate negatives sticking to their storage enclosures, private collection

Cellulose Nitrate Film

Stages of Deterioration

Stage 1. No deterioration

Stage 2. The negatives begin to mirror and yellow

Stage 3. The film becomes sticky and emits a strong order

Stage 4. The film is amber and image begins to fade

Cellulose Nitrate Film

Stages of Deterioration

Stage 1. No deterioration

Stage 2. The negatives begin to mirror and yellow

Stage 3. The film becomes sticky and emits a strong order

Stage 4. The film is amber and image begins to fade

Stage 5. The film can degenerate into a brown powder

Cellulose Nitrate Film

Stages of Deterioration

Stage 5. The film can degenerate into a brown powder

Late–stage deterioration of nitrate film.

Nitrate film in the last stage of degradation, Library of Congress Preservation Web Site (loc.gov/preservation)

Cellulose Nitrate Film

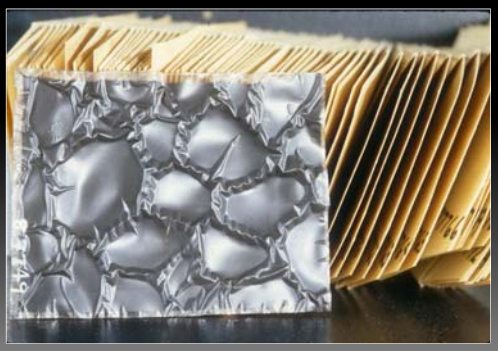
Nitrate negative, private collection

Nitrate Film is a hazardous material and flammable

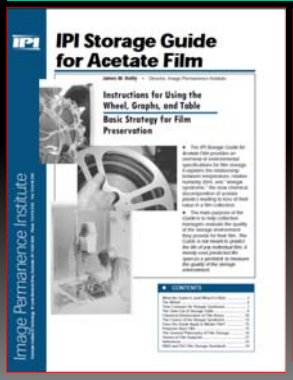
- What you must do is dependent on local fire codes, institutional and insurance policies, and local officials
- Hire a consultant
- Determine the amount and condition of your nitrate film
- Become familiar with the National Fire Protection Association 40 Standard
- Make cold storage a priority

Nitrate film in the last stage of degradation, Library of Congress Preservation Web Site (loc.gov/preservation)

Cellulose Acetate Film Base



https://www.imagepermanenceinstitute.org/webfm_send/299



Cellulose Acetate Film – 1920's to present

- Safety film introduced to replace nitrate
- Gradual transition
- Acetate is generic term for other similar plastics
- Variety of formats

Provided by University of Cincinnati Libraries, Archives & Rare Book Library

Cellulose Acetate Film Base

COMMON FORMATS and SIZES	
Portrait and commercial sheet film	4 x 5, 5 x 7, 8 x 10, 11 x 14 inches
135mm roll film	35 millimeter strip
120 medium format roll film	2.5 inch strip
Professional motion picture film	35 millimeter strip

Valverde, M.F. 2005. Photographic negatives: nature and evolution of processes.

Cellulose Acetate Film

Deterioration

- Shrinkage
- Bubbles and crystals
- Vinegar smell
- Silver image does not fade

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Provided by University of Cincinnati Libraries, Archives & Rare Book Library

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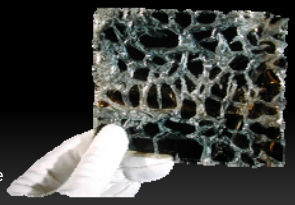
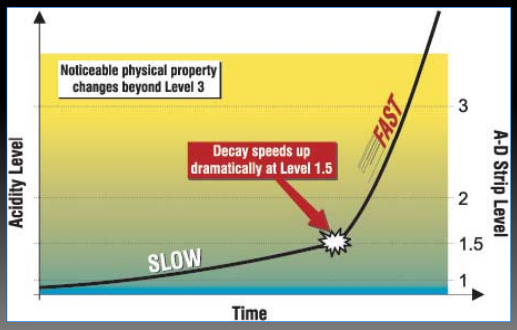


Cellulose Acetate Film



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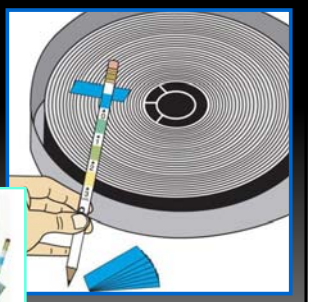
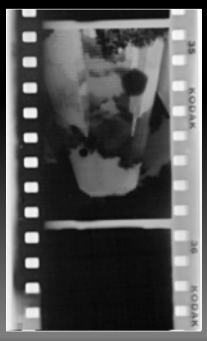


Polyester Film 1951-present

Gelatin on polyester sheet film negative with positive image right .Denis Defibaugh (American, 1951-). Van Loan Cottage, Bar Harbor, Maine, 2001. 10.16 x 12.7 cm (4 x 5 in.). Collection of photographer.

Polyester Film – 1951 to present

- Began to replace acetate in 1960s's
- Very high physical and chemical stability
- Variety of formats

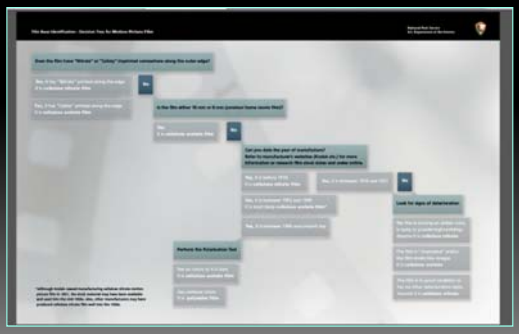


Polyester film negative, "The Blog" George Eastman House

IDENTIFICATION

http://www.nedcc.org/resources/leaflets/5Photographs/01ShortGuide.php

IDENTIFICATION



http://www.brightlineinteractive.com/_projects/NPS-CS/flash/pdf/2.3.1c1.pdf

IDENTIFICATION : DATING

Suffrage Parade, Washington, D.C., 1913 Library of Congress

IDENTIFICATION: EDGE PRINTING

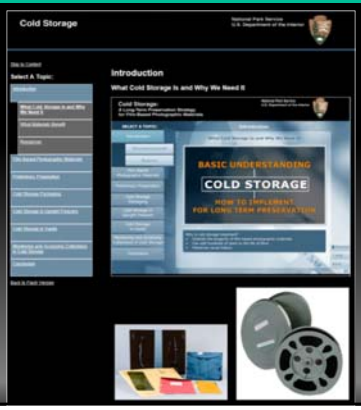
Nitrate film, "The Blog" George Eastman House

Motion picture film notch codes, www.film-center.com

IDENTIFICATION: DETERIORATION

Deteriorated acetate negative, Cornell University Department of Preservation and Collection Maintenance

http://www.nps.gov/museum/coldstorage/html/intro1_1.html



Advocacy

- The negative is the link between the captured scene, the camera and the print
- The negative process selected reveals:
  - intention
  - preferences
  - choice of materials
  - processing techniques
  - printing techniques
- The image is the witness of time
- The negative is the testimony of the recording of the image

Auguste Rodin, Gertrude Käsebier, 1905, Glass Plate Negative
Library of Congress

https://www.imagepermanenceinstitute.org/imaging/film-poster

Homework

- Using the negative identification guidelines and additional resources presented, determine what type of negatives you have in your collection.
- What type of negative do you have most of?
- Briefly describe some negatives or groups of negatives in your collection that are of concern to you. Tell us specifically why they are of concern--is it their condition? Or their significance or value? Or the number of them? Or your ability to care for them? Or a combination of these reasons?
- Briefly describe how the negatives you described above are housed. Describe the enclosures, storage furniture, and environmental conditions.