



Everything You Need to Know About Microfiche

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U.S. Government Publishing Office

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Mansfield Library, University of Montana

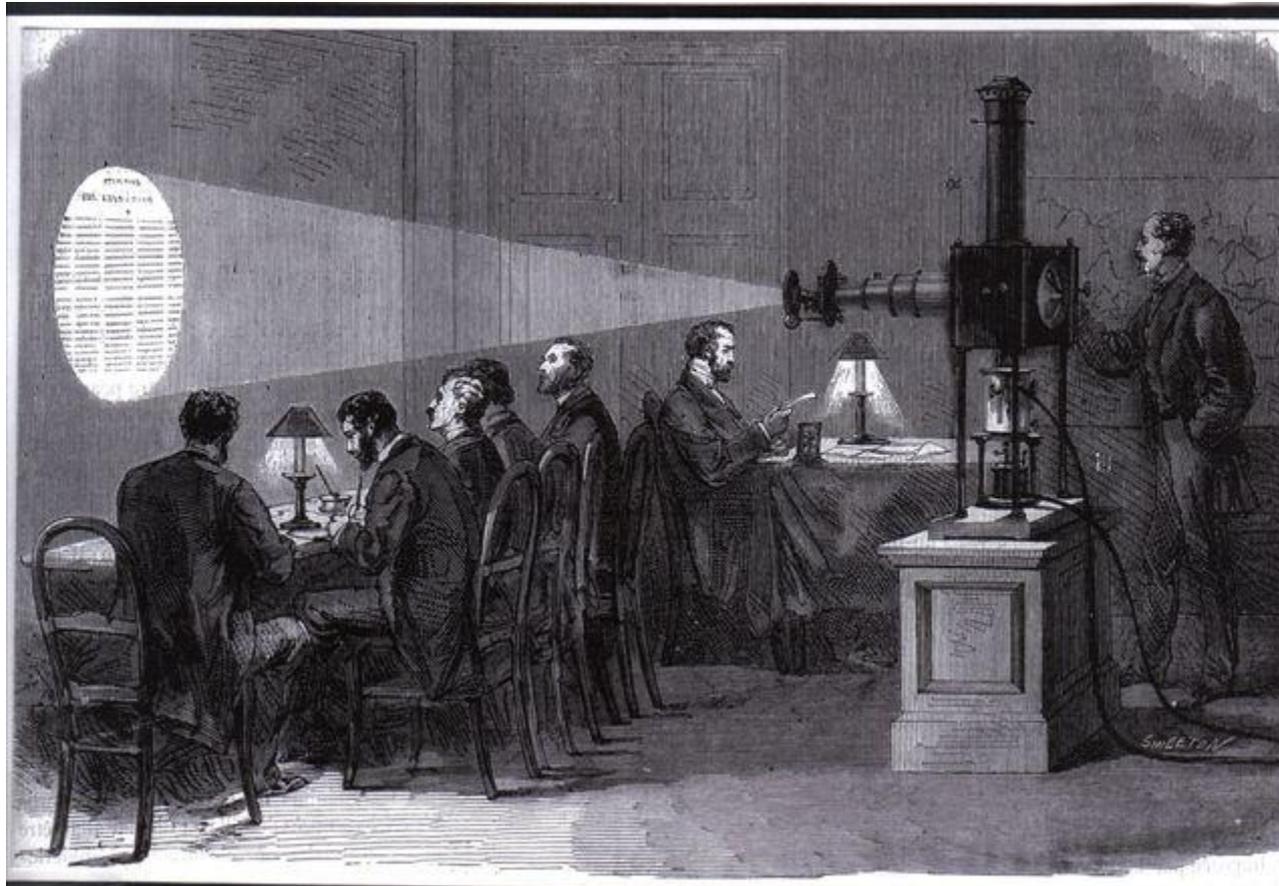
May 9, 2017

Microfiche:

- Distribution began 1977
- Hundreds of titles
- Millions of fiche
- Content both selected through the FDLP and collected from other sources



Origins:





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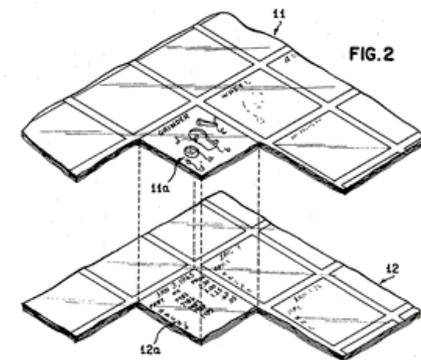
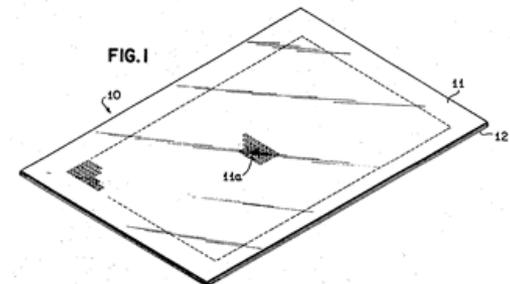
C.O. Carlson

- Modeled after an ISO A6 notecard
 - Used modified existing microfilm technology
- Plan was to create an information retrieval system

May 16, 1967
Filed Feb. 17, 1965

C. O. CARLSON
SYSTEM FOR RETRIEVING MICROIMAGES FORMED ON SUPERPOSITIONED
MICROFORMS AND THE LIKE

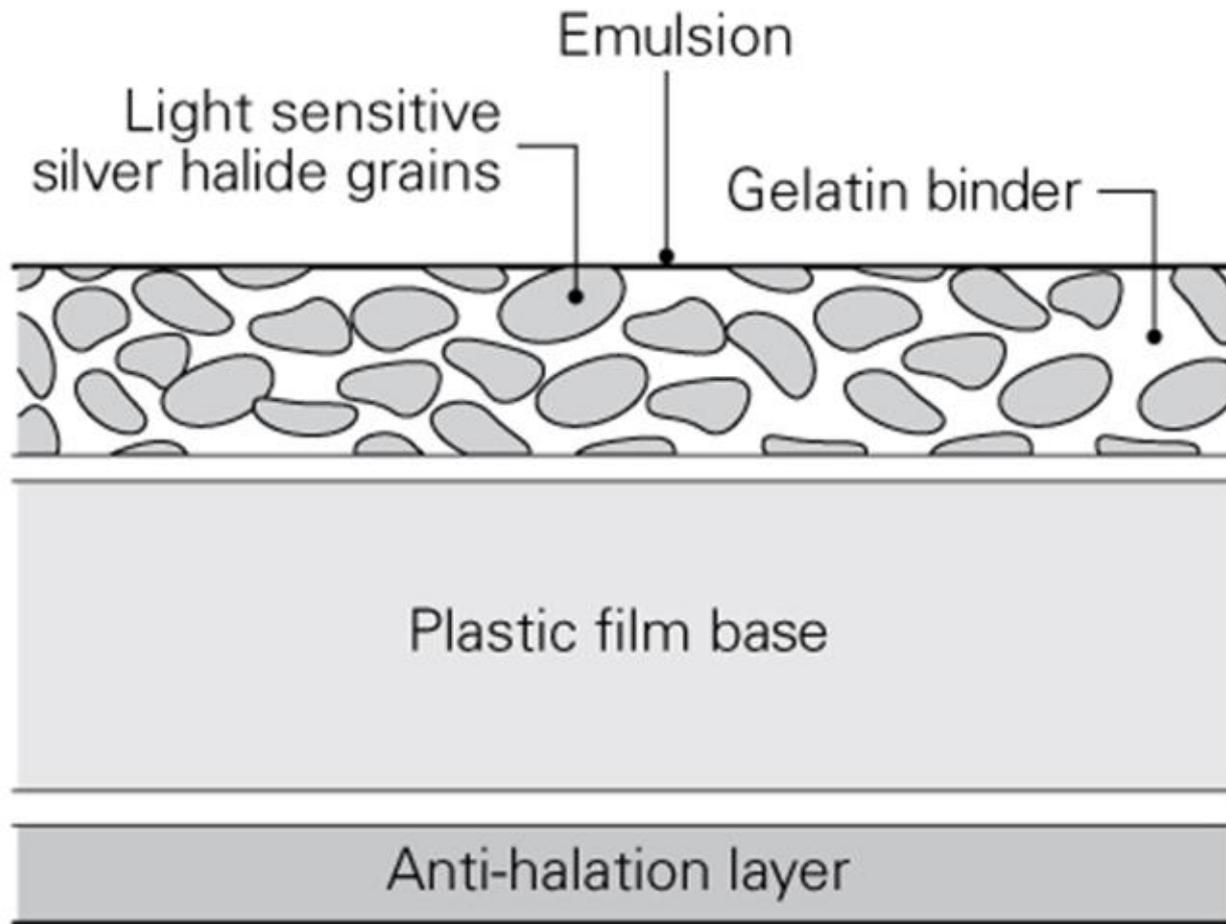
3,319,518
5 Sheets-Sheet 1



INVENTOR
CARL O. CARLSON

Arvid A. Kline
John J. MacLagan
Richard W. Boyer
HIS ATTORNEYS

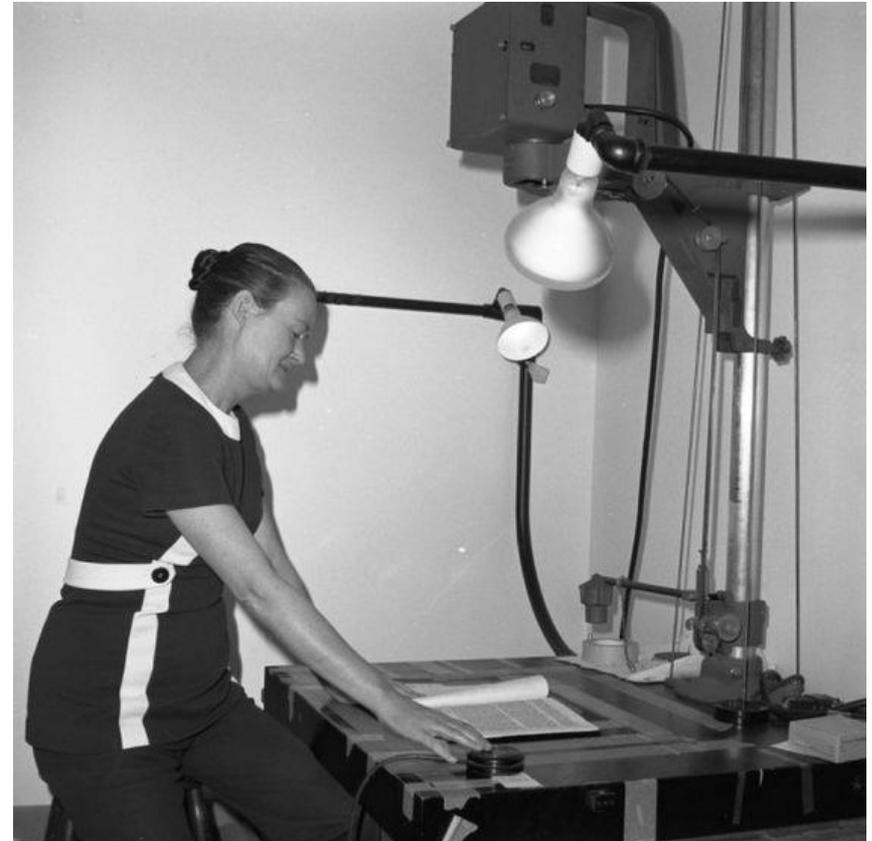
How it's made:



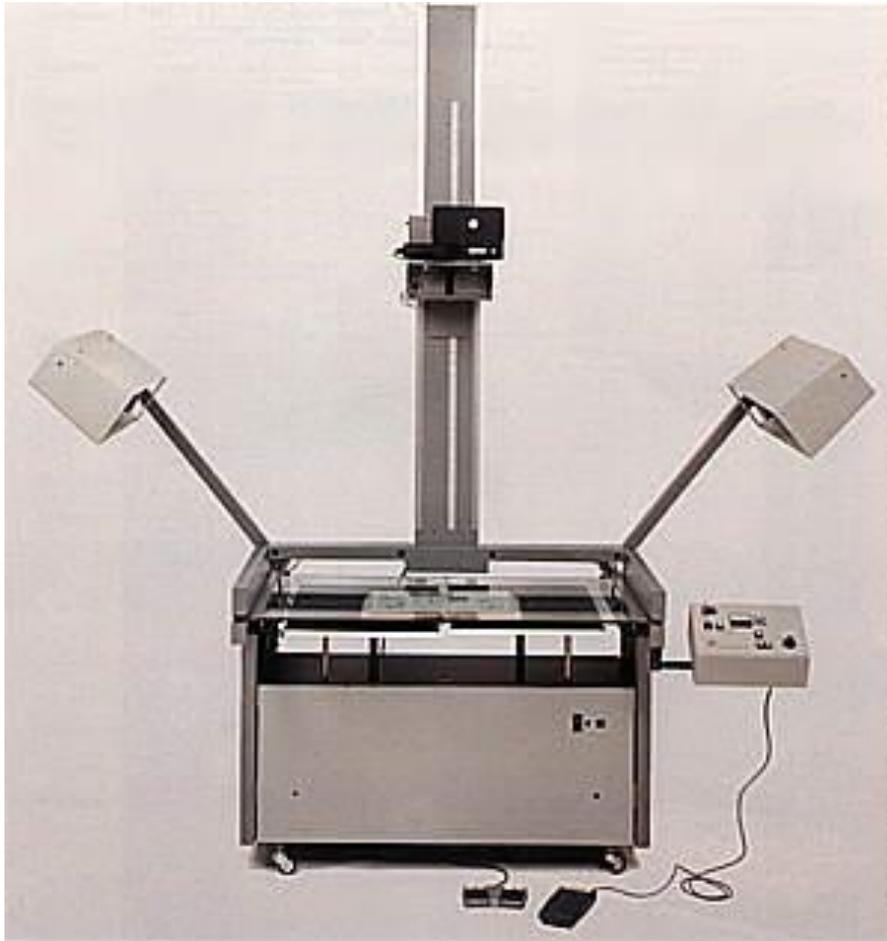
Types of fiche:

Silver Halide –

- Master negatives and sometimes first generation positives
- High contrast image with black text and clear/white background. Some continuous tone film used to capture gray scale images
- Emulsion side is dull. Base side is glossy.
- Produced on Acetate and Polyester base



Types of fiche:



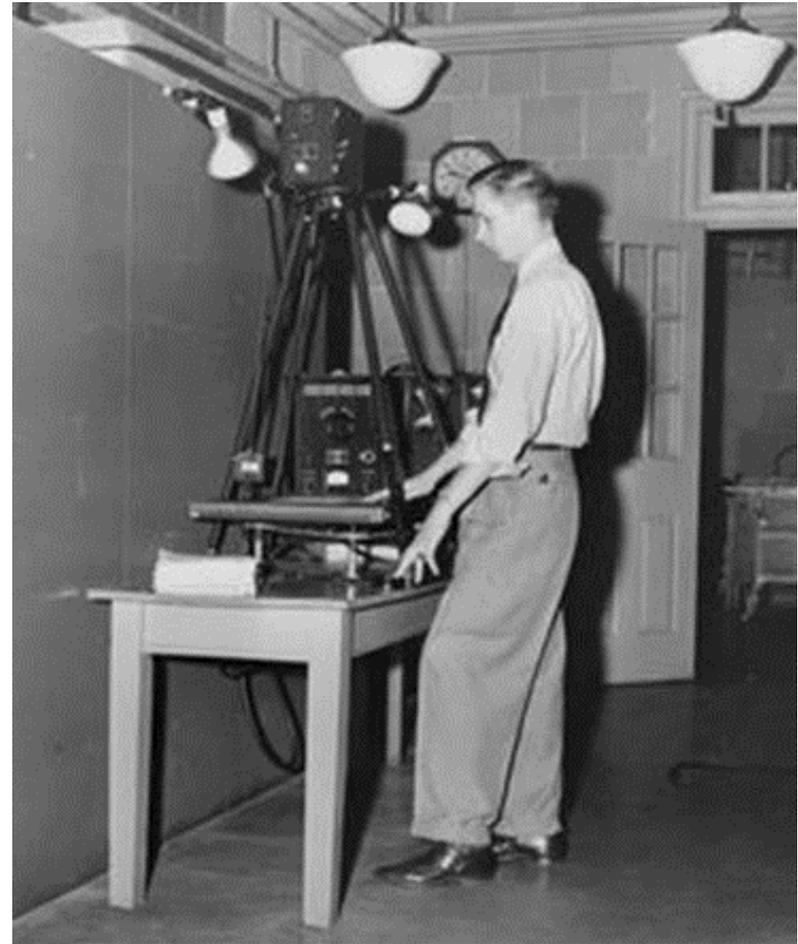
Diazo –

- Always a duplicate and a distribution copy
- Image is created by diazonium salts coupled with various colored dyes
- Black dyes resemble silver halide
- Produced on acetate and polyester base

Types of fiche:

Vesicular –

- Always a duplicate copy
- Diazonium salt coating is sandwiched between two polyester base layers.
- Image produced by expanding gas bubbles (vesicles) between the layers of plastic
- Fiche feels thicker since its two fused layers of thinner plastic
- Not able to resolve fine detail
- Produced on polyester base





Home



FDsys:
GPO's Federal Digital System
America's Authentic Government Information

Customers

Find the latest GPO Services & Products

Vendors

Doing Business with GPO

- Procurement
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 - Bid Opportunities
 - Simplified Purchase Agreement - SPA
 - Select Forms & Standards
- New Opportunities
 - New Initiatives
- Acquisition Services
 - Overview
 - Select Forms & Standards

Libraries

Find information about Federal depository libraries & the Catalog of U.S. Government Publications

Home > Vendors > Quality Control and Inventory Management > Microforms

GPO Contract Terms

Quality Assurance Through Attributes Program for Microforms

Prospective suppliers should carefully read this publication as the applicable articles stated herein become an integral part of microform contracts with the U.S. Government Publishing Office. A printed copy should be retained for reference.

NOTE: This electronic version of the official printed GPO Publication 310.3 (effective August 31, 1988; Rev. 1-95) is not intended to replace the printed version.

GPO Publication 310.3
(R 1-95)

Table of Contents

Note: Previously used names of these attributes are in italic in parentheses.

Foreword

- Introduction
- Definitions
- Determination of Product Quality
- Determining Acceptability
- Modifications to Attribute Tolerances

Attribute

- Aperture Card—New Attribute
- Character Fidelity (*Character Defects*)
- Cut Mark
- Density
- Film Color (*Film Color, Diazo/Vesicular*)
- Film Stability (*Film Stability, Diazo and Residual Thiosulfate*)
- Flatness (*Curl*)
- Format
- Grid Alignment (*Grid Skewness*)
- Grid Placement (*Grid Pattern Position*)
- Heading Area Backing (*Heading Backing Color, Thickness and Title Coverage*)
- Image Mark (*Document Mark*)
- Image Placement (*Index Placement, Upside Down Image*)
- Image Squareness (*Image Skewness*)
- Information (*Loss of Information*)
- Jacket—New Attribute
- Leader and Trailer Length
- Length and Width
- Margins
- Microfiche Set
- Microform Usability (*Damaged Microform and Extraneous Marks*)
- Packaging
- Reduction Ratio (*Reduction*)
- Resolving Power (*Resolving Power of Microform*)
- Safety Film

Quick Links

Letter from the Director of the U.S. Government Publishing Office

Government Accountability Office Contract Appeals Board (GAOCAB)
[Resolutions of contract disputes](#)

Publishing Services Listing
A comprehensive list of goods & services.

Vendor Contact

Bid Room
(Customer Services – Printing Procurement)
ph 202.512.0526
ppdsmia@gpo.gov

Quality Control for Published Products
ph 202.512.0542
QCPF@gpo.gov
[Sample Submission Procedures](#)

Acquisition Services
(for all other GPO purchases)
ph 202.512.0916



Preservation issues with microfiche

- Nearly an obsolete file format
- Microfilm and microfiche are vulnerable to warmer temperatures, high humidity, and mold
- Size and weight of storage cases usually means basement storage, which raises concerns about humidity
- Cellulose Acetate film base degrades: “vinegar syndrome”
- Condition of the nationally distributed collection of publications on microfiche is unknown
- Diazo and vesicular format microfiche created for cost-effective access, not long-term preservation



The storage environment

- Silver fiche should never be stored in the same cabinet as diazo!
- Storage and use area should be as free from dust as possible
- Stored so that fiche is supported to stand upright
- Ideal temperature < 70 F.
- Ideal humidity 20-50 % rH



Vinegar syndrome

- Applies only to film with a polyvinyl acetate base
- Decay is accelerated heat, humidity and resulting acid
- Film outgases acetic acid – vinegar
- Film base shrinks destroying the image layer
- Acid also destroys the image layer



Finding a solution:

- Webinar topic: *Everything you Need to Know about Microfiche*, May 9, 2017
- Community engagement
- Develop a pilot project to assess the condition of microfiche collections
- Evaluate and share results
- Develop cost efficient, sustainable plan that preserves access to content
- Implement plan
- Evaluate results
- White paper on a potential mitigation strategy



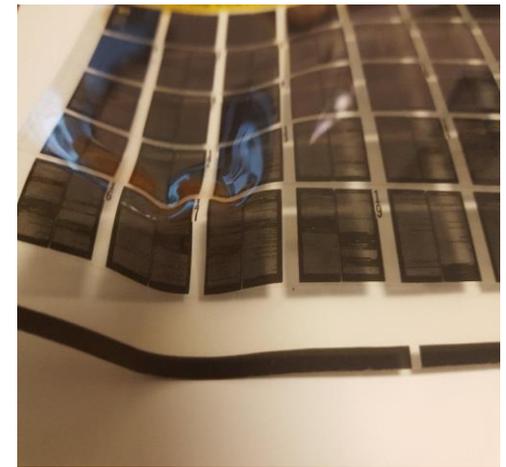
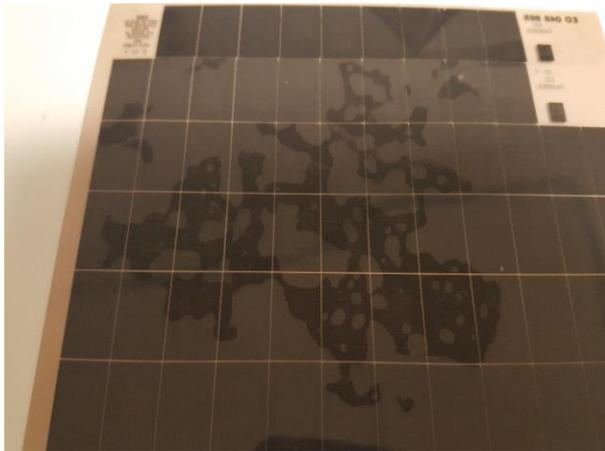
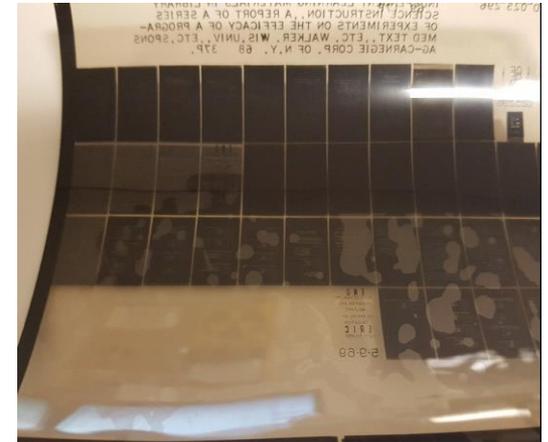
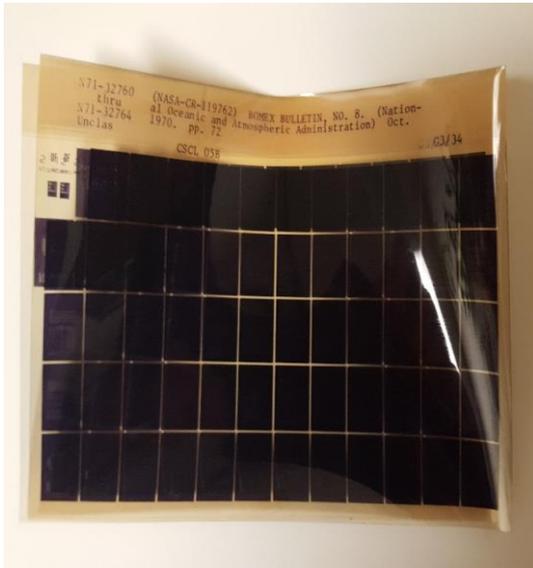
Finding a solution:

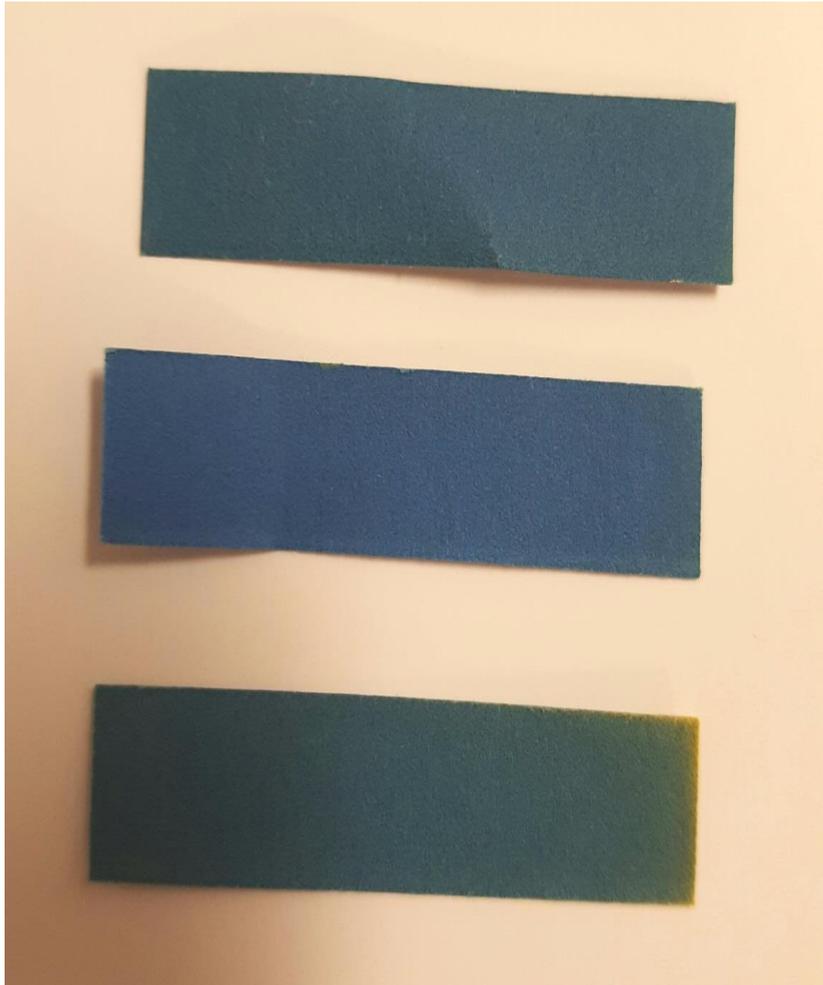
- A preservation pilot would initiate:
 - A condition assessment of microfiche in participating libraries
 - A bibliographic assessment of the titles of publications shipped on microfiche (GPO)
 - Outreach to Federal agencies to see if a digital copy can be acquired
 - Reformatting from original silver halide masters to digital formats for ingest into FDsys/govinfo

Using Test Strips



Level	Film Condition	Recommended Actions
0	Good- No deterioration	Cool/cold storage
1	Fair to good- Deterioration starting	Cold storage monitor closely
1.5	Rapid degradation starting- point of autocatalytic decay	Cold storage or freeze
2	Poor- actively degrading	Freeze, copying advisable
3	Critical- shrinkage and warping imminent; possible handling hazard	Freeze immediately, copy

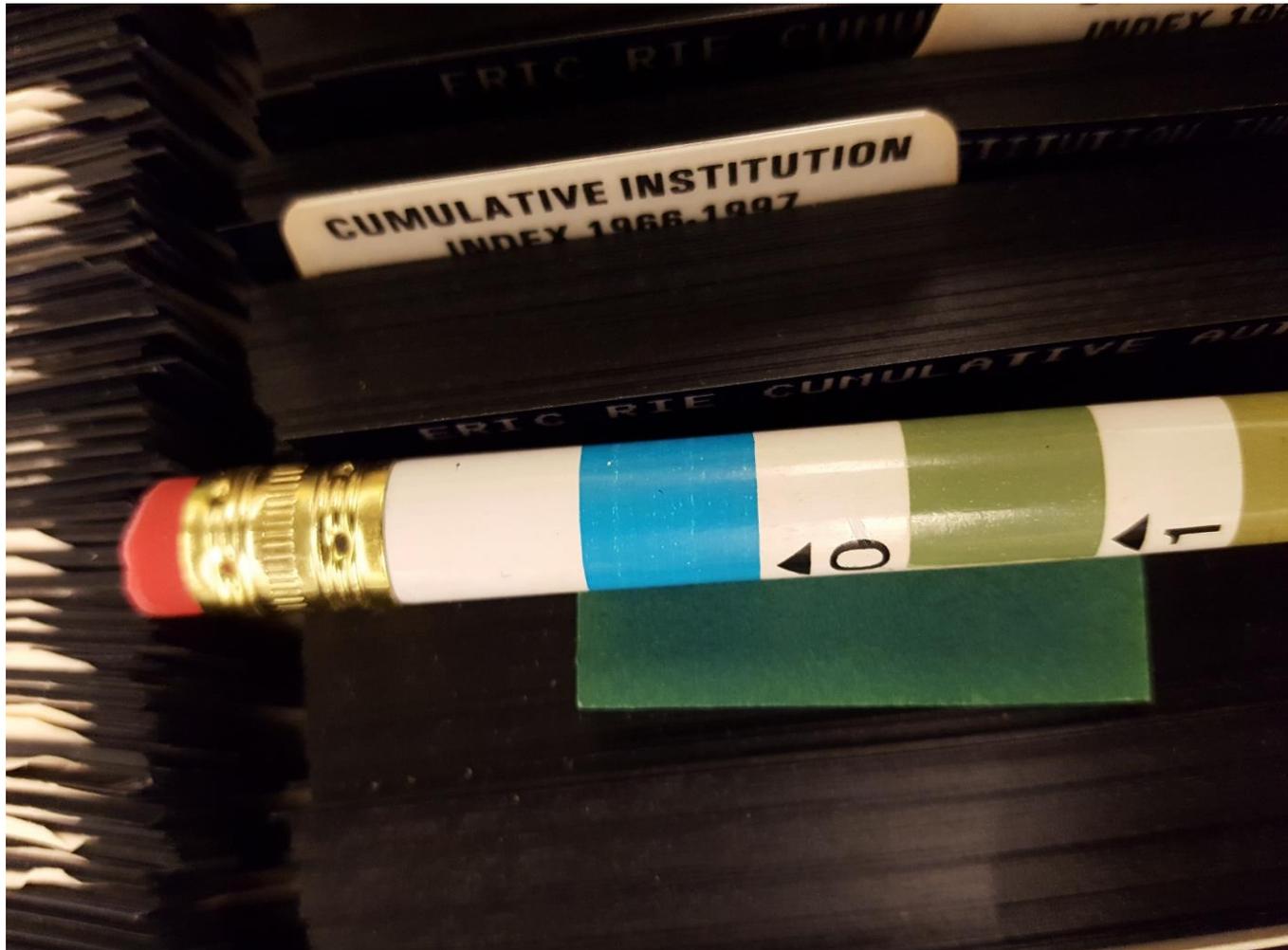




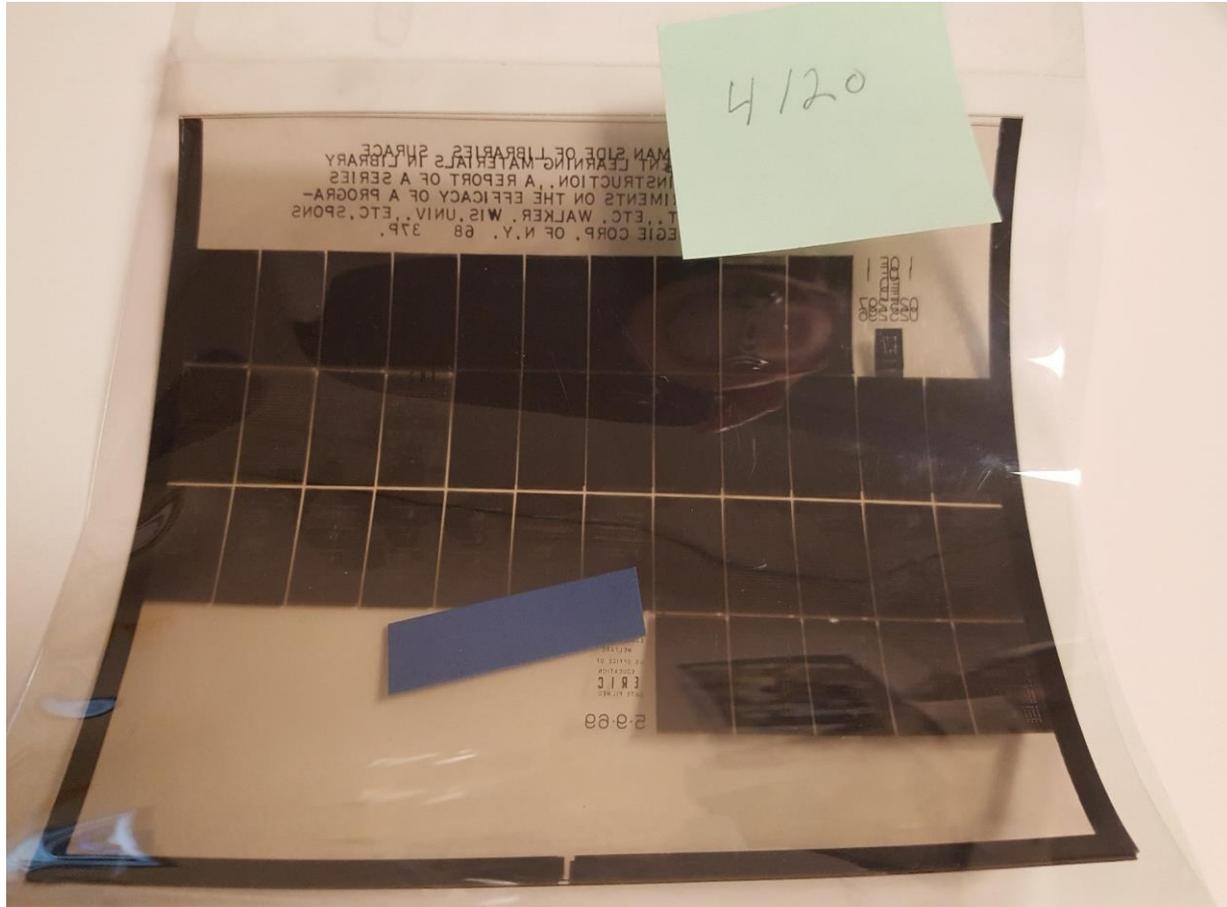
- Control, 48 hours
- New
- With fiche, 48 hour

Testing, Round 1





Round 2





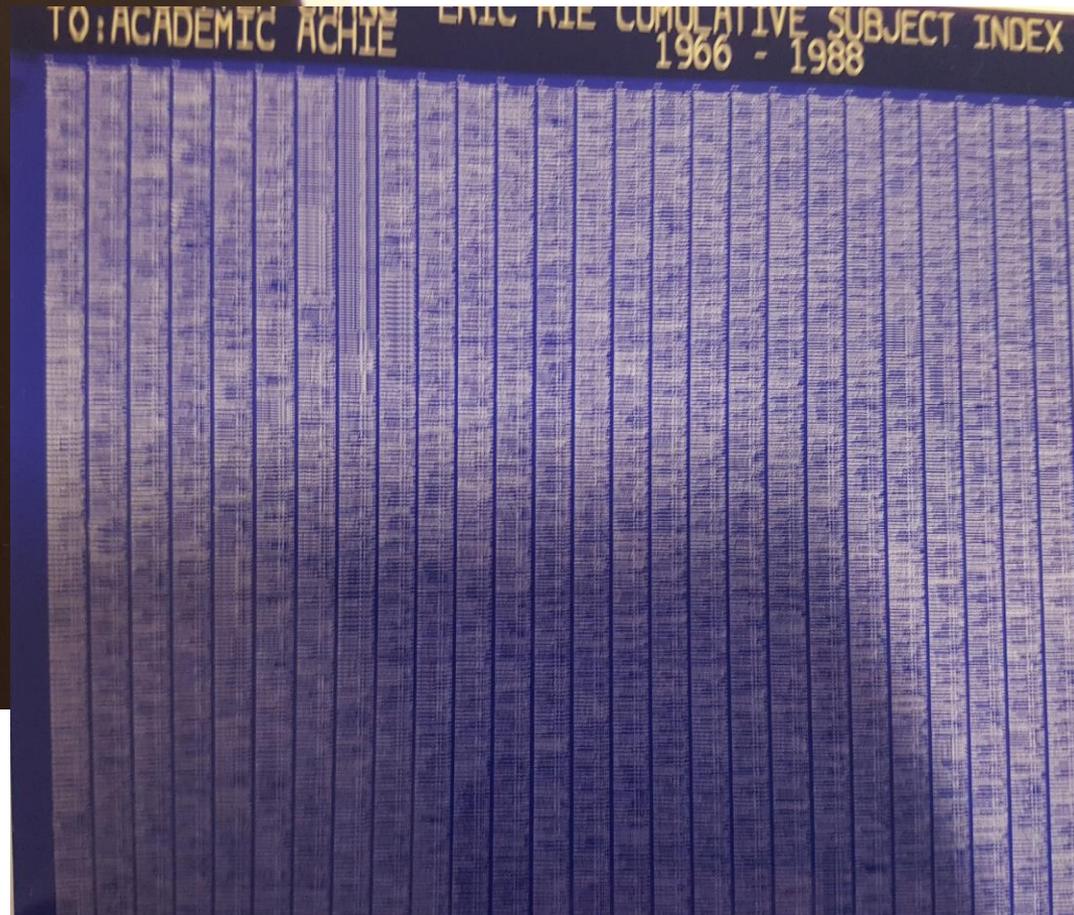
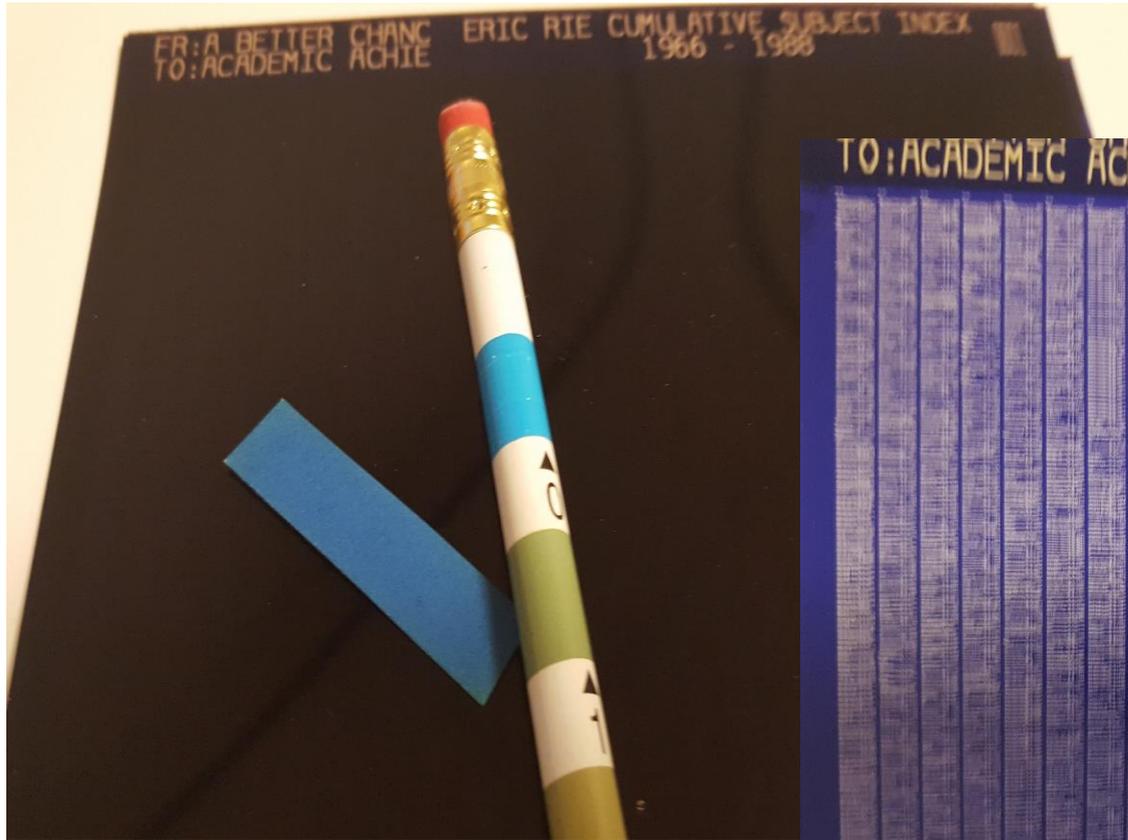
24 hours

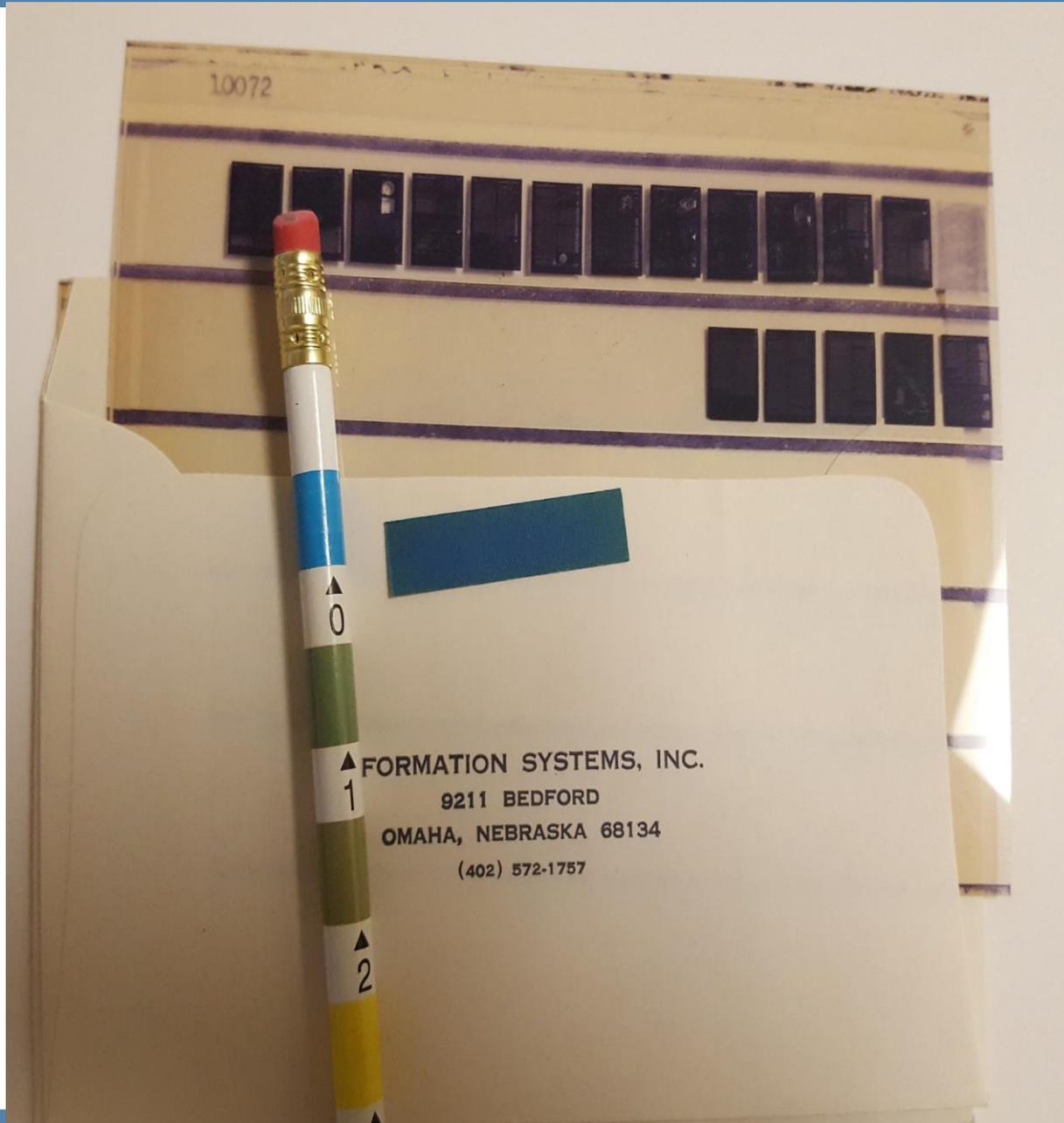


48 hours

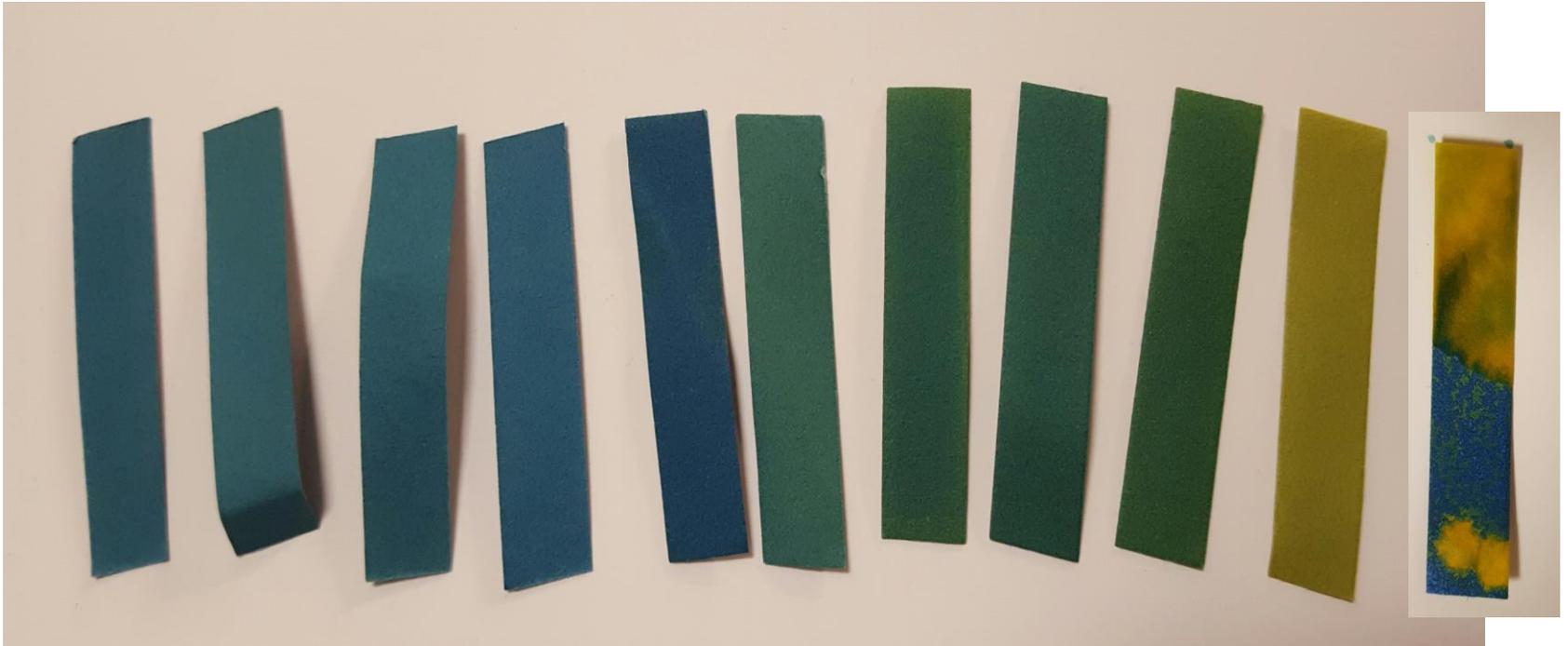












Tracking change

Date	Drawer	Reading 7/28	Date	Reading 4/16
7/21/2015	EP1.23/2	0.5	4/13/2017	0.5
7/21/2015	EP1.23/8	0.5	4/13/2017	0.5
7/21/2015	EP 1.89/2:600	0.5	4/13/2017	0.5

7/21/2015	EP 4.11X1200	0.75	4/13	1
7/21/2015	3400	missing	4/13	1
7/21/2015	5551	0.95	4/13	1



Information sources:

<http://cdm15003.contentdm.oclc.org/cdm/ref/collection/p267701coll33/id/262>

RLG Microfilming Handbook

www.nedcc.org

Northeast Document Conservation Center

<https://www.imagepermanenceinstitute.org/>

Image Permanence Institute



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