



1

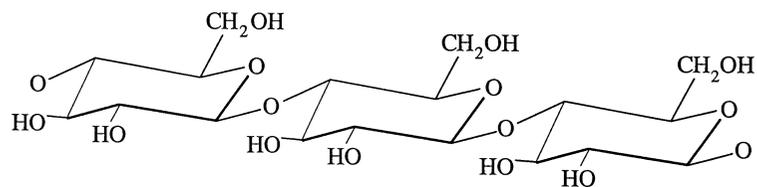
Vinegar Syndrome

Albanian Cinema Project
«Archives in Motion»
AQSHF, Tirana, Albania
2016–10–18

Reto Kromer • AV Preservation by reto.ch

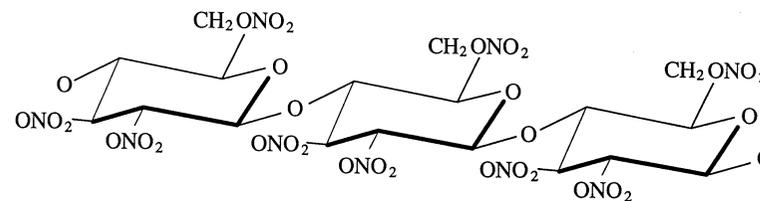
2

Cellulose



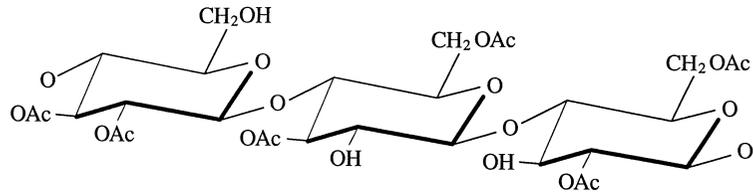
3

Cellulose Nitrate



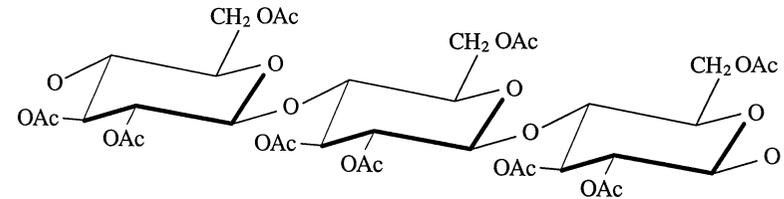
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Cellulose Diacetate



5

Cellulose Triacetate

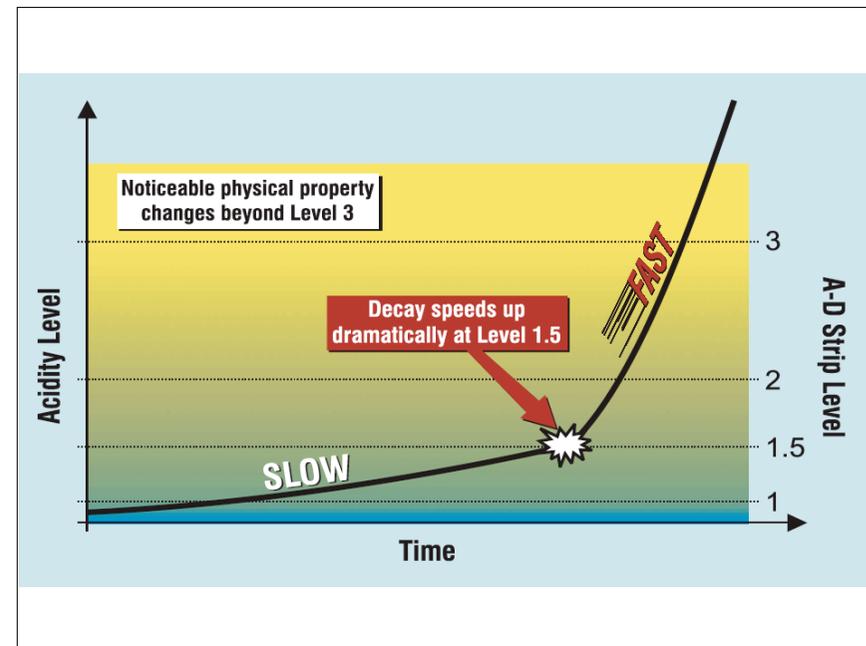


6

Life expectancy (20 °C and 50% RH)

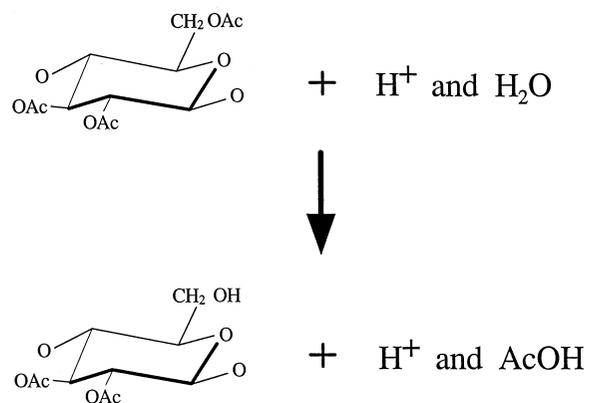
base	years
nitrate	10 to 300
triacetate	44
polyester	more than 1000

7



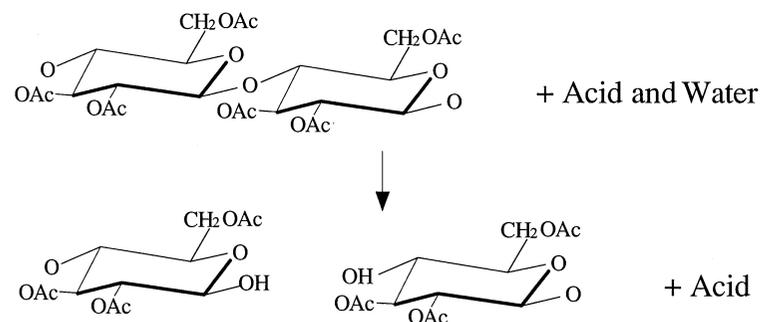
8

1. Acid Catalysed Hydrolysis (Deacetylation)

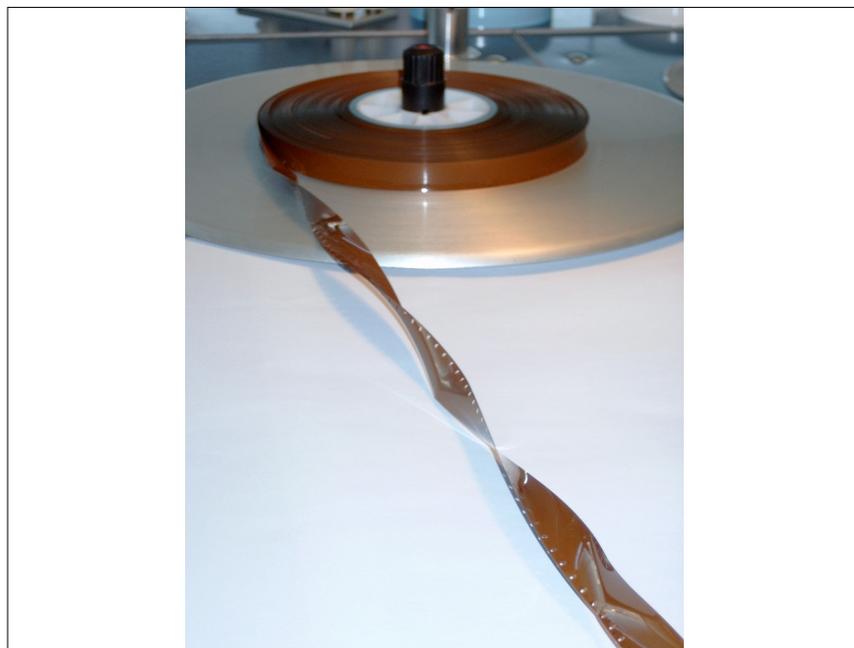


9

2. Glycosidic Cleavage by Hydrolysis



10



11



12



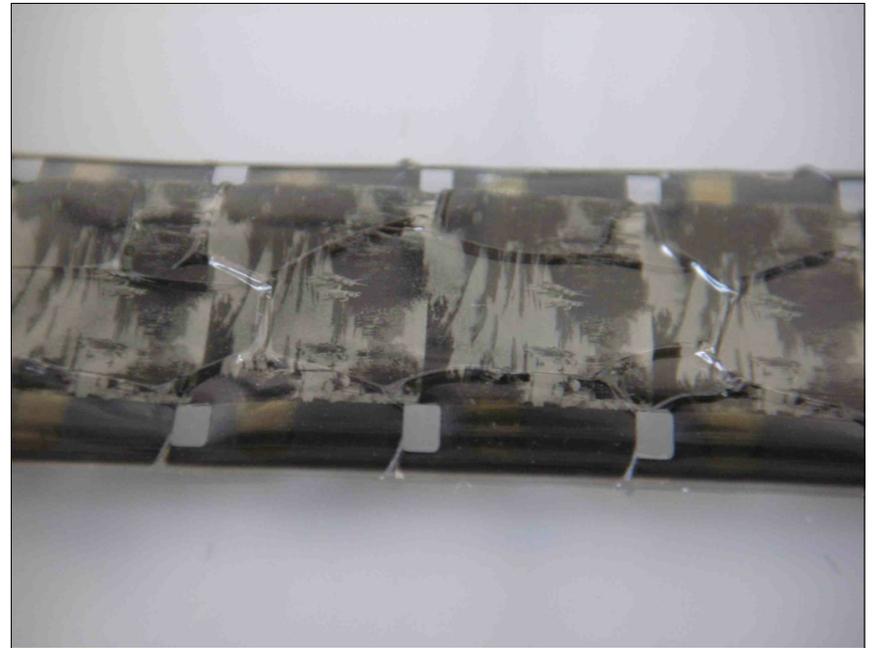
13



14



15



16

Acid-Detection Strips

- A-D Strips measures the acidity (pH value), which is correlated to the presence of acetic acid.
- Keep A-D Strips in the dark in a sealed bag until use.
- Don't use twice the same A-D Strip.

17

Instructions for use

1. Open the can and put an A-D Strip on the top of the film within. Close the can.
2. Wait a certain length of time (depends on the temperature and the relative humidity).
3. Remove the A-D Strip and immediately compare to the colour bands on the reference pencil.

18

From 30% to 50% RH

temperature	time
20 °C	48 hours
12 °C	2 weeks
4 °C	4 weeks
- 4 °C	8 weeks

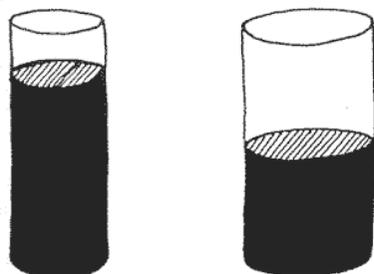
19

Interpretation and actions

0	no damage	periodic check
1	little damage	lower temperature
1,5	autocatalysis	plan digitisation
2	high damage	digitisation
3	high risk to lost	urgent digitisation

20

Warming...

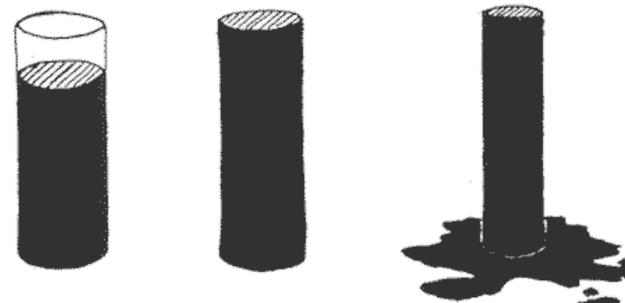


22 °C
80% RH

30 °C
50% RH

21

Cooling...



22 °C
80% RH

19 °C
100% RH

10 °C
100% RH

22

Bibliography

James M. Reilly: **IPI Storage Guide for Acetate Film**. Image Permanence Institute, Rochester NY 1993

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User's Guide for A-D Strips. Film Base Deterioration Monitors. Image Permanence Institute, Rochester NY 2001

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23

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24