

# An Ounce of Chemistry

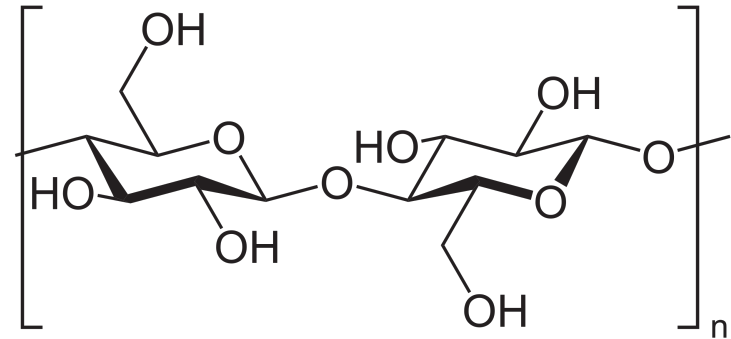
Reto Kromer • AV Preservation by reto.ch

## Physical Conservation Treatments for Digitising Film: Re-plasticisation

AMIA Conference  
Baltimore, Maryland, USA  
13–16 November 2019

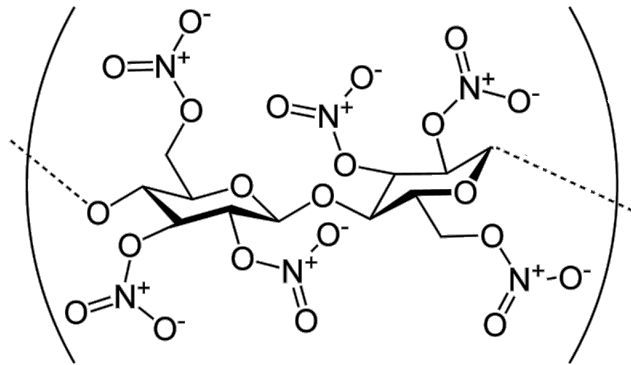
1

## Cellulose



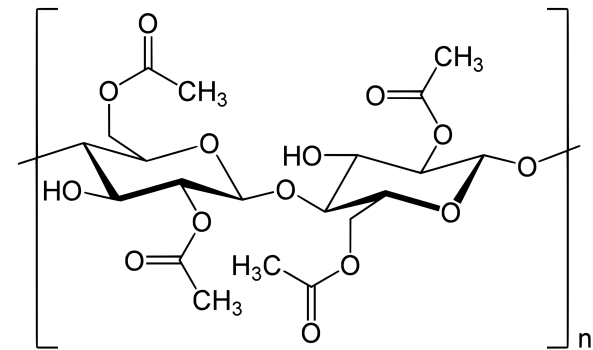
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## Nitrocellulose



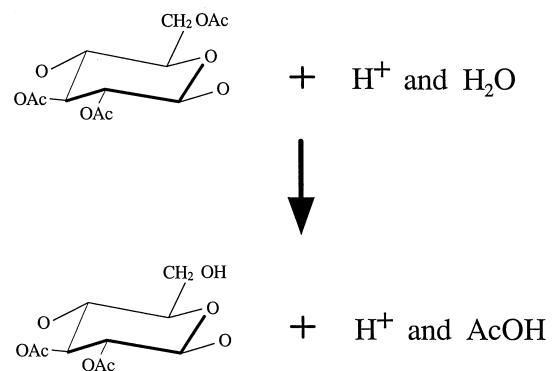
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## Cellulose Acetate



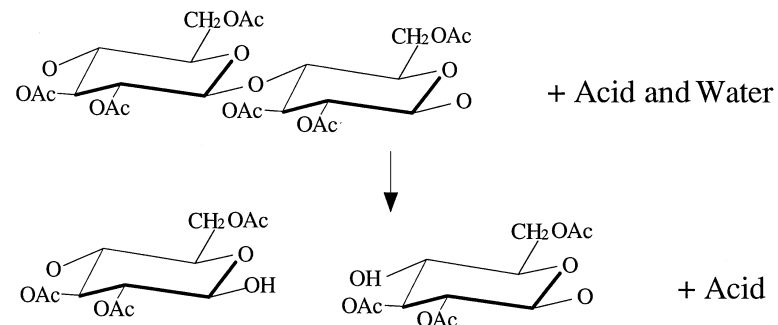
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## Acid Catalysed Hydrolysis



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## Glycosidic Cleavage by Hydrolysis



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## Bibliography

Paul Read and Mark-Paul Meyer:  
**Restoration of Motion Picture Film.**  
Butterworth-Heinemann, Oxford 2000

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**Always refrain from  
using chemical  
substances if you  
don't know exactly  
what you are  
doing!**

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## Recipe 1

- water
- less than 0.5% of formaldehyde

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## Recipe 2

- 3 parts of water
- 1 part of glycerol
- 1 part of acetone supplemented with camphor respectively with methyl phthalate

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## Recipe 3

- camphor dissolved in isopropyl alcohol until saturation

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## AV Preservation by reto.ch

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