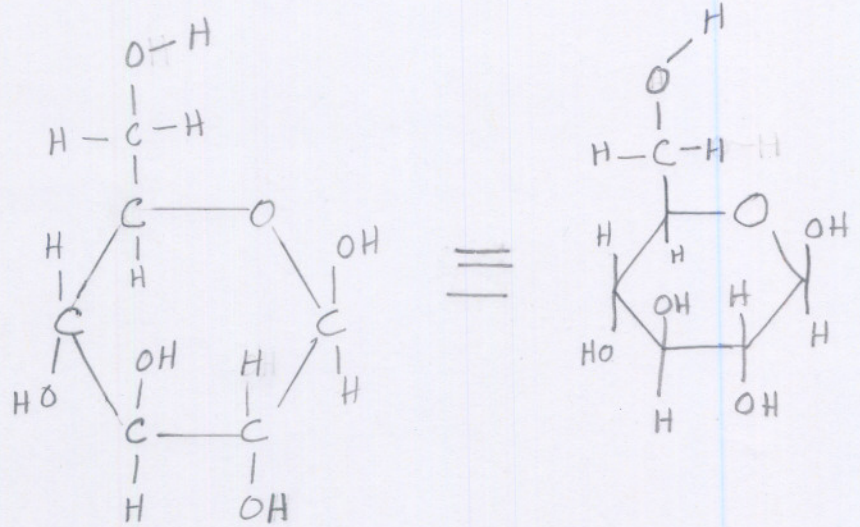
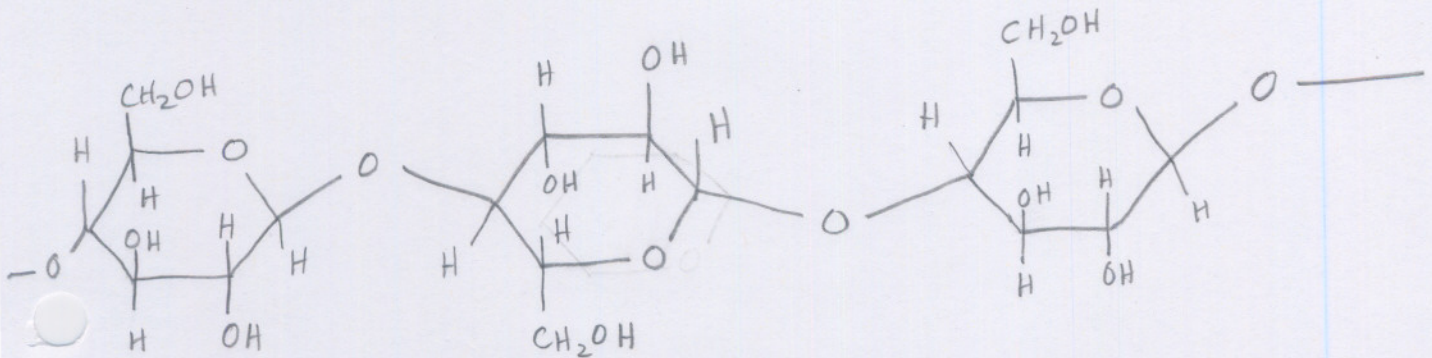
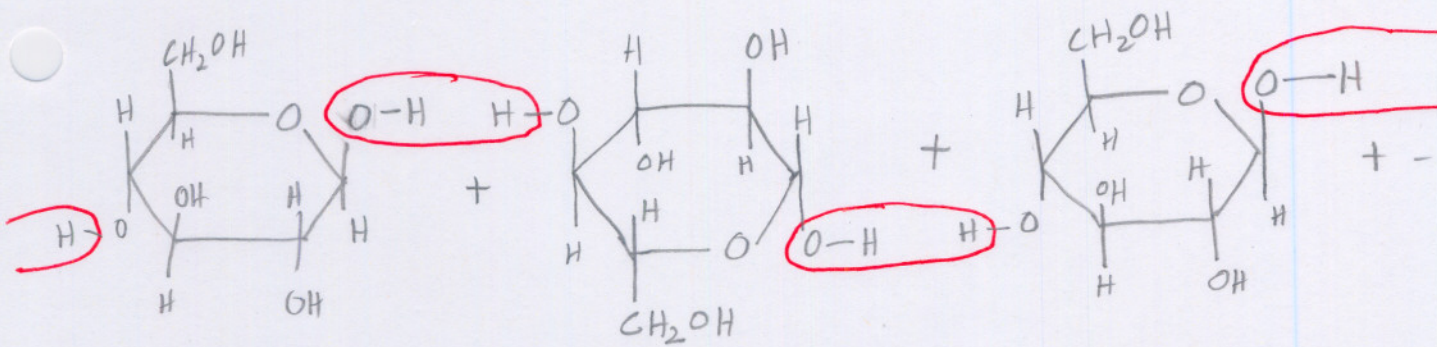


Structure of β -D-glucose

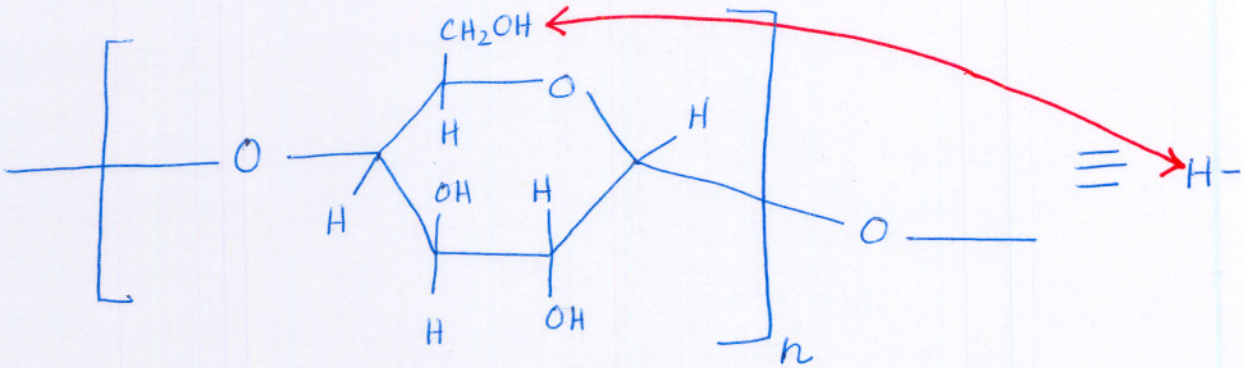


Polymerization of β -D-glucose to form cellulose (poly - 1, 4, D-glucopyranose)



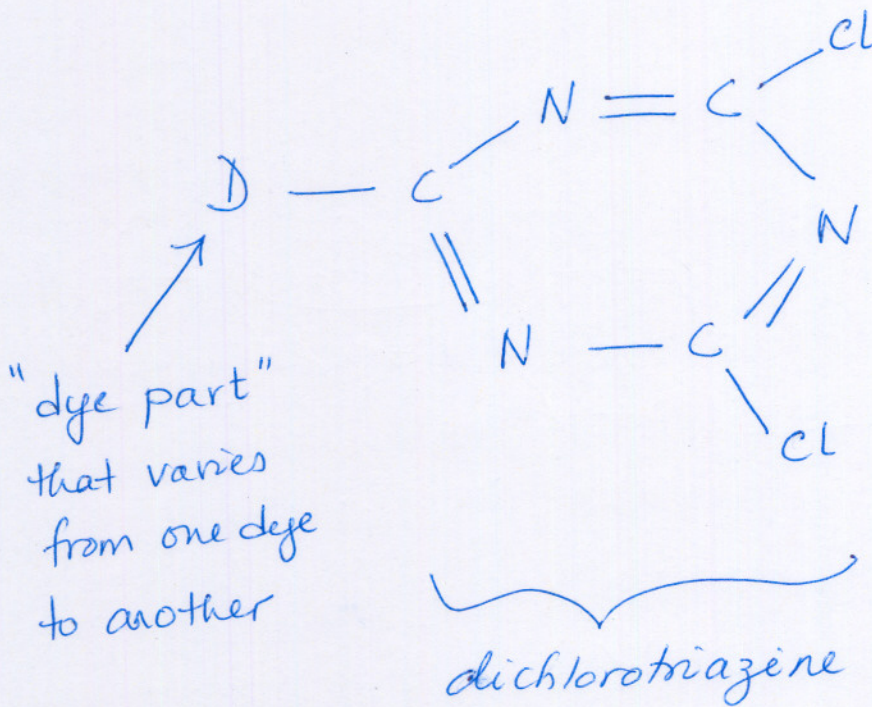
Cellulose (1,4, D-glucopyranose)

This polymerized structure of cellulose can be abbreviated as H—O-cellulose.

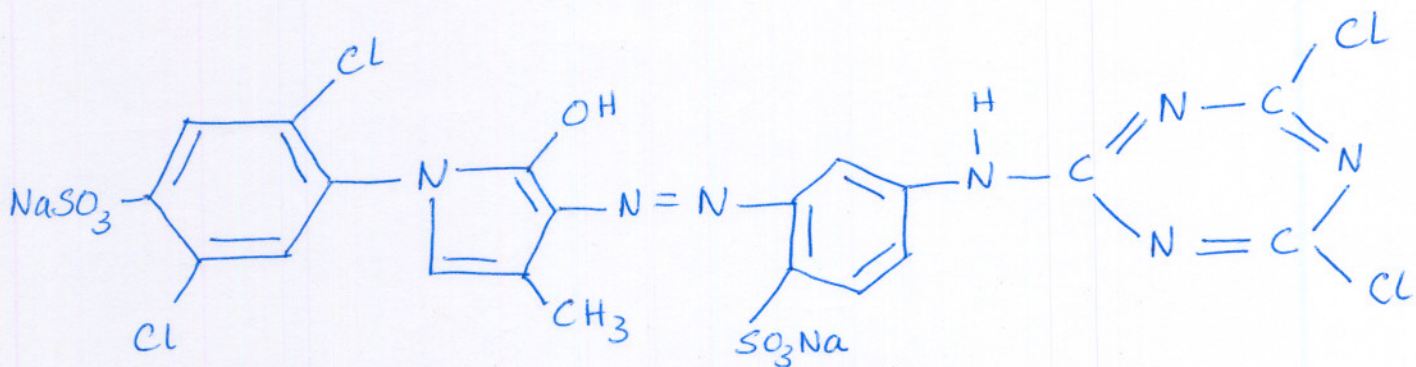


n is very large

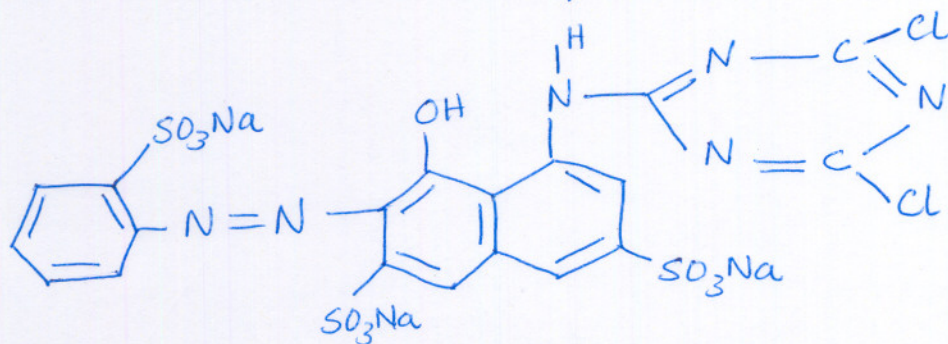
General formula for the Procion fiber reactive dyes (dichlorotriazine dyes)



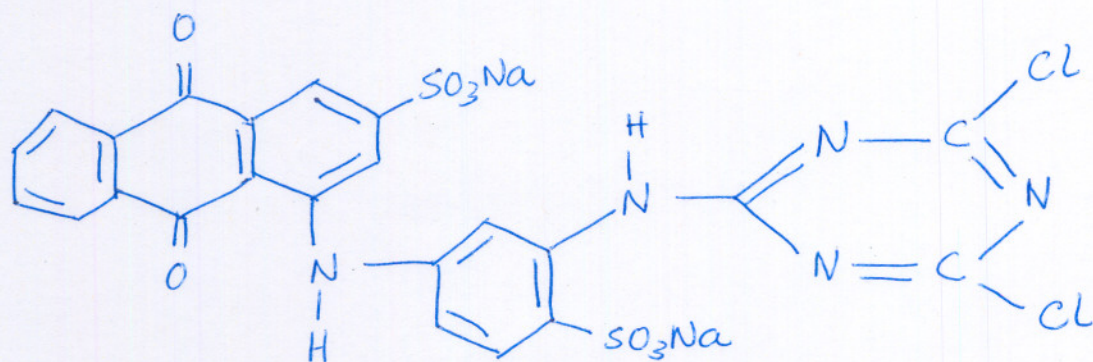
Structures of several Procion fiber reactive dyes



Procion brilliant yellow M-6G (CI = Reactive yellow 17)



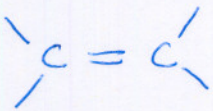


Procion brilliant red M-2B (CI - Reactive Red 1)



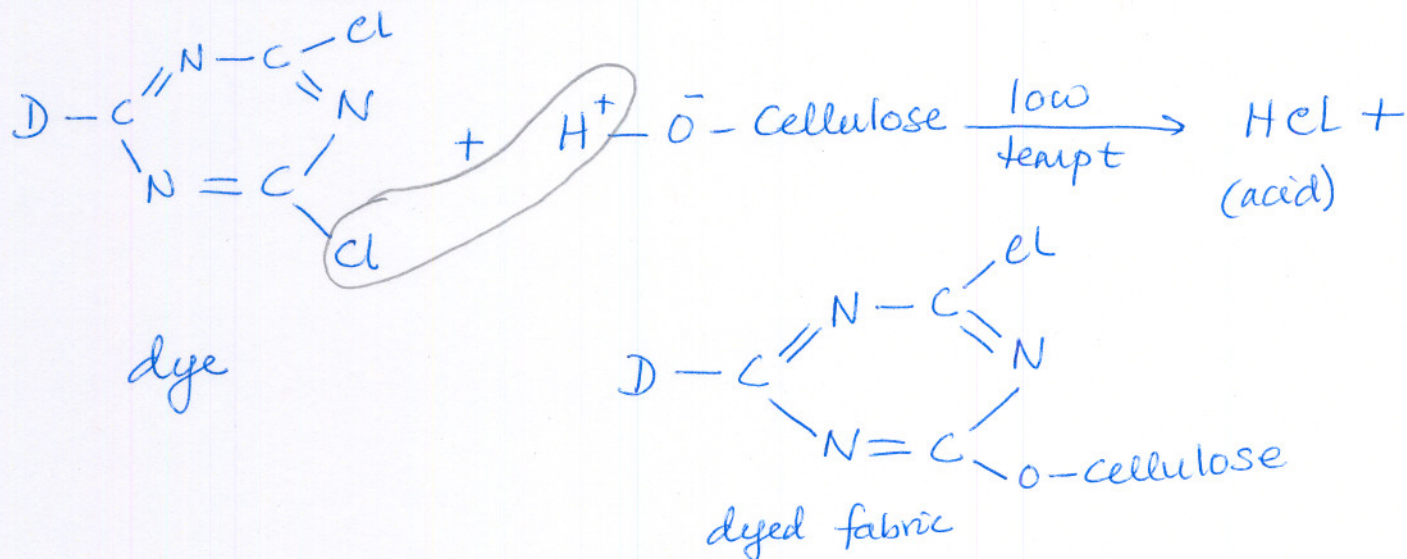
Procion brilliant blue M-R (CI - Reactive blue 4)

- **Chromophore** – this is the color (chroma) bearing (phore) portion of the dye. Chromophore is a Greek word.
- **Auxochrome** – this influences the intensity of the dye. Also provides a site at which the dye can chemically bond to a fabric.
- **Solubilizing group** – this allows the dye molecule to be water soluble so that it can interact with the fiber while in solution.

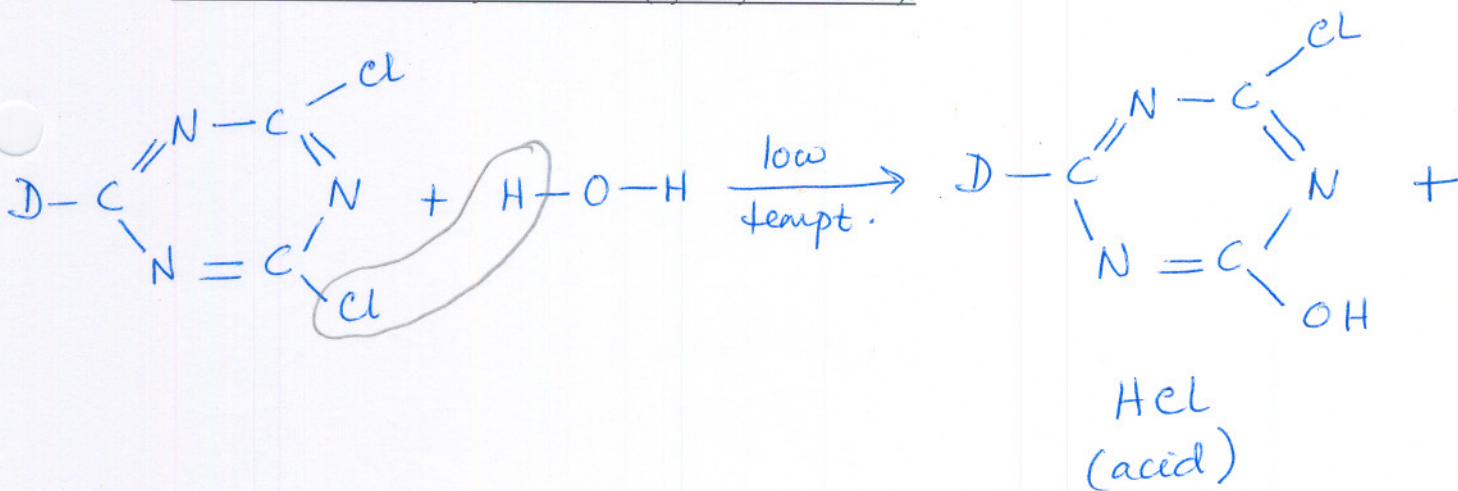
chromophores	auxochromes	solubilizing groups
	$-CH_3$	$SO_3 Na$
	$-OCH_3$	$NH_2 Cl$
$-N=N-$	$-OH$	$SO_2 NH_2$
$-N=\overset{O}{\underset{ }{N}}-$	$-NH_2$	ONa
	$-NO_2$ $-SO_3 Na$	

LOW TEMPERATURE REACTIONS

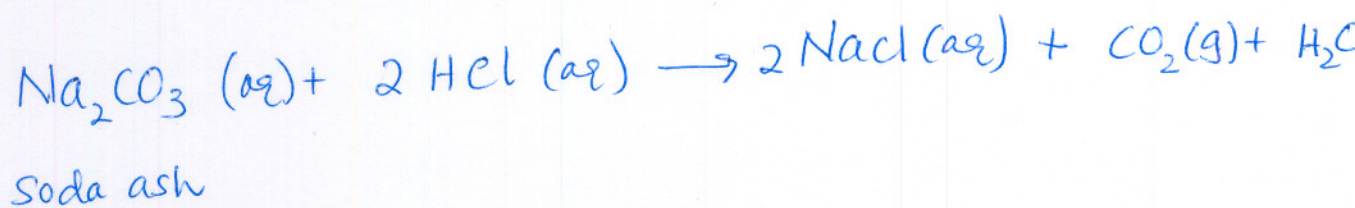
Reaction between the dye and the fabric:



Reaction between the dye and water (hydrolysis reaction):

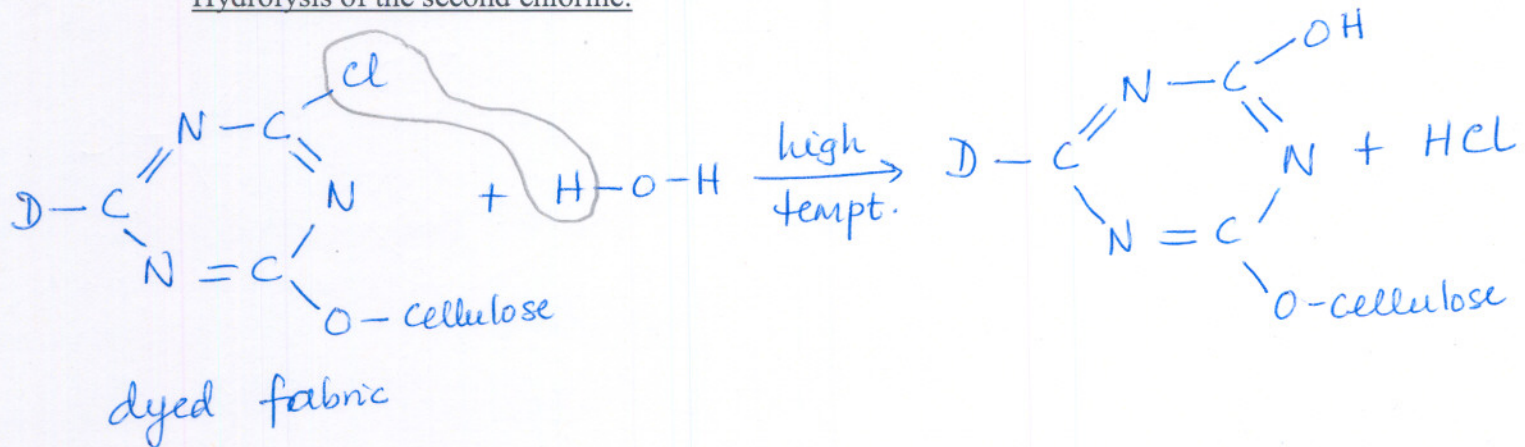


Reaction between soda ash and hydrochloric acid (HCl):



HIGH TEMPERATURE REACTIONS

Hydrolysis of the second chlorine:



Reaction of the second chlorine with HO-cellulose:

