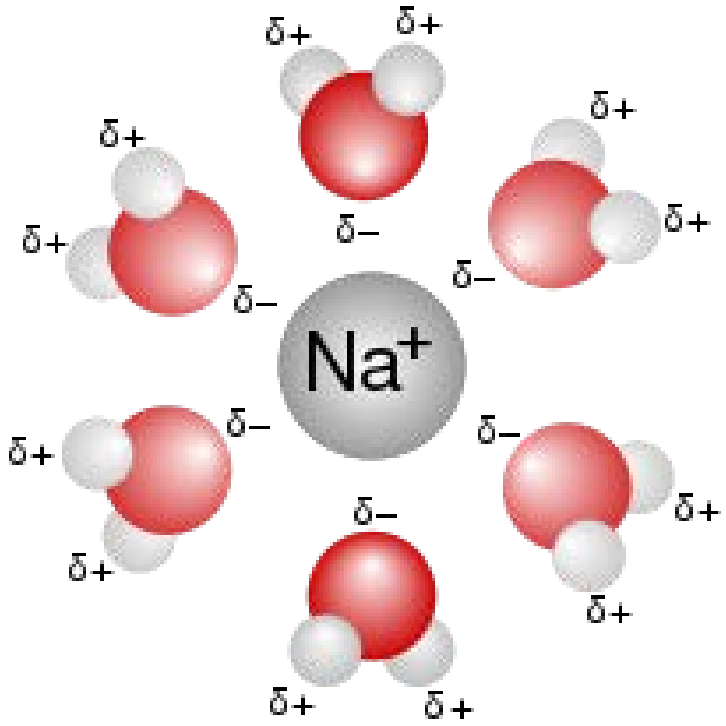
LC15 : Solvants

Classification des solvants selon leur polarité

« Polarité » ↗

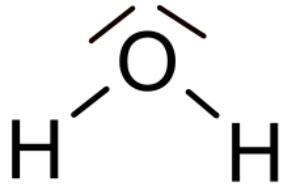
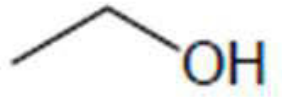
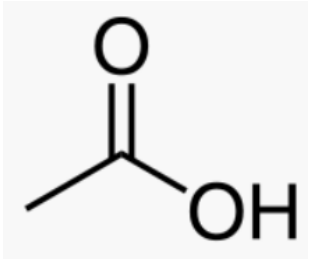
Solvant	μ / D	ε_r
cyclohexane	0	2,0
éther diéthylique	1,15	4,2
acétate d'éthyle	1,78	6,0
cyclohexanone	2,90	18,3
acétone	2,88	20,7
éthanol	1,69	24,8
méthanol	1,70	32,7
eau	1,85	78,5

Solvatation des espèces chargées

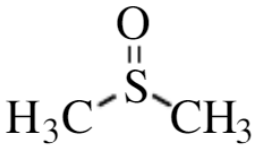


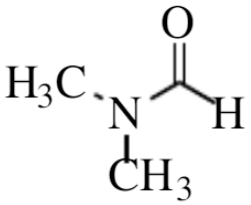
Classification des solvants

- Solvants polaires protiques

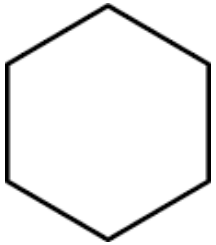
- Solvants polaires aprotiques


DMSO

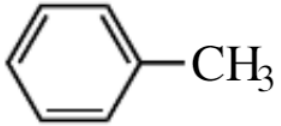

DMF


HMPT

- Solvants apolaires aprotiques



THF

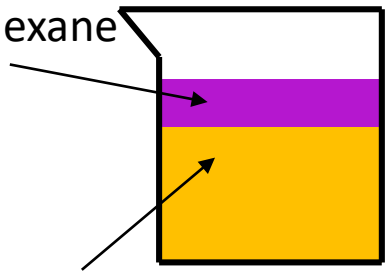

Toluène

Coefficient de partage

Quantité de I_2 introduite connue

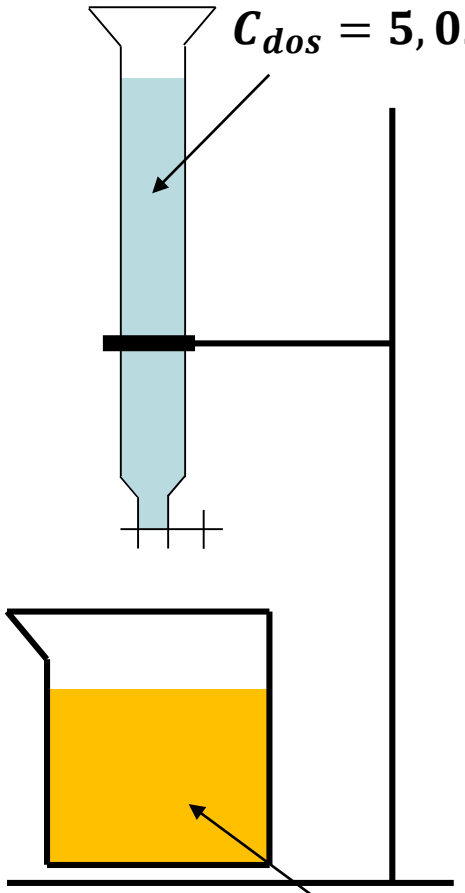
$n_{I_2,tot} = 9{,}84.10^{-4}$mol

$\boldsymbol{V_0 = 20\ mL}$
I_2 dans cyclohexane



$\boldsymbol{V_1 = 200\ mL}$
I_2 dans eau

Solution de thiosulfate de sodium à $C_{dos} = 5,0.10^{-3}$ mol/L



Fraction $V = 50$ mL de V_1
I_2 dans eau

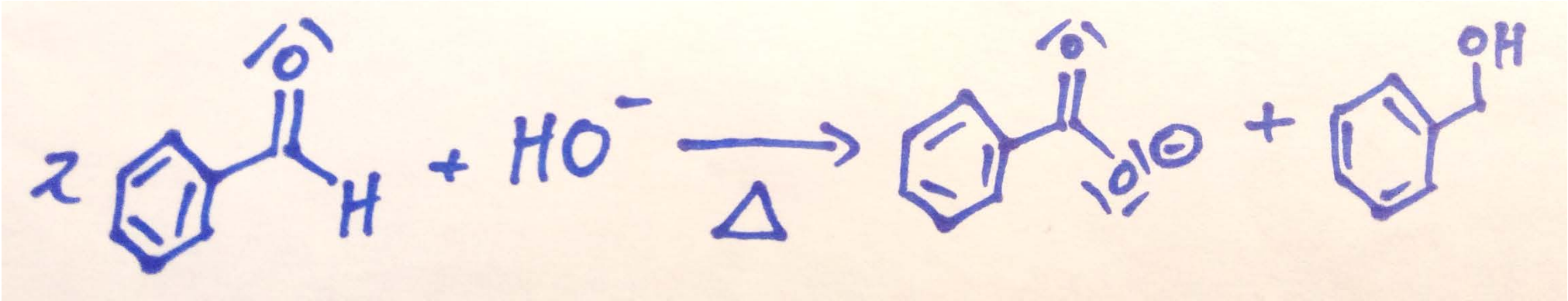
Réaction support de dosage :

$$I_{2(aq)} + 2S_2O_{3(aq)}^{2-} = 2I_{(aq)}^{-} + S_4O_{6(aq)}^{2-}$$

$$\Rightarrow n_{I_2,aq,} = \frac{n_{S_2O_3{}^{2-}}}{2}$$

$$P = \frac{\frac{n_{I_2,tot}}{4} - \frac{V_{eq}C_{dos}}{2}}{\frac{V_0}{\frac{V_{eq}C_{dos}}{2V}}}$$

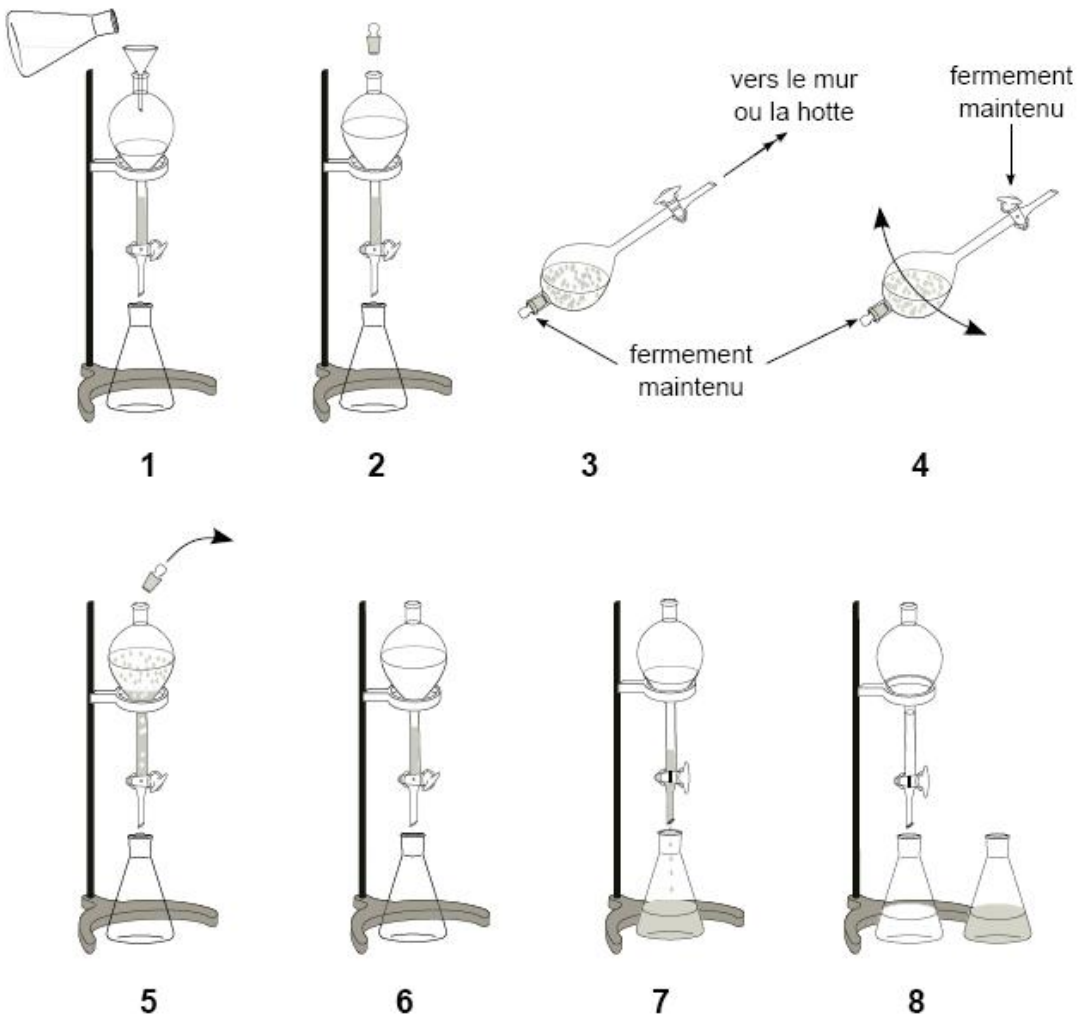
Réaction de Cannizzaro (1853)



benzaldéhyde ion benzoate alcool benzylique

Extraction liquide-liquide

M. Blanchard-Desce, Chimie organique expérimentale, Hermann

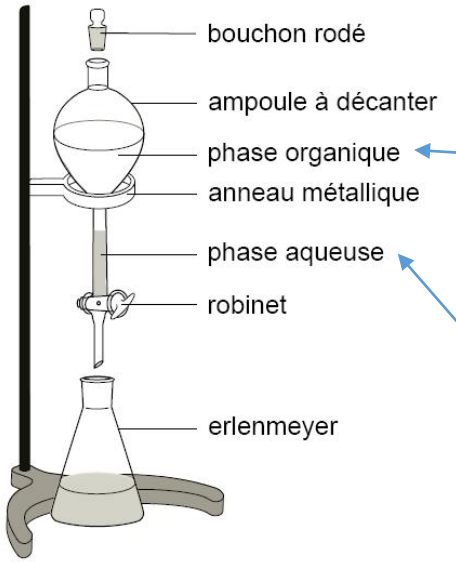


A.-S. Bernard, Techniques expérimentales en Chimie, Dunod

Protocole :

- On verse le brut réactionnel aqueux ainsi que de l'éther dans l'ampoule à décanter

- On procède comme sur le schéma et on récupère la phase organique et la phase aqueuse



$d_{éther} = 0{,}71$

alcool benzylique

ions benzoates