LC21 : Cinétique homogène

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Vitesse d'une réaction

- $I^-_{(aq)} + Ag^+_{(aq)} = AgI_{(s)}$ **Rapide**

- $2I^-_{(aq)} + S_2O_8^{2-}{}_{(aq)} = I_{2\,(aq)} + 2SO_4^{2-}{}_{(aq)}$ **Lente**

Réaction entre les ions iodure et peroxodisulfate

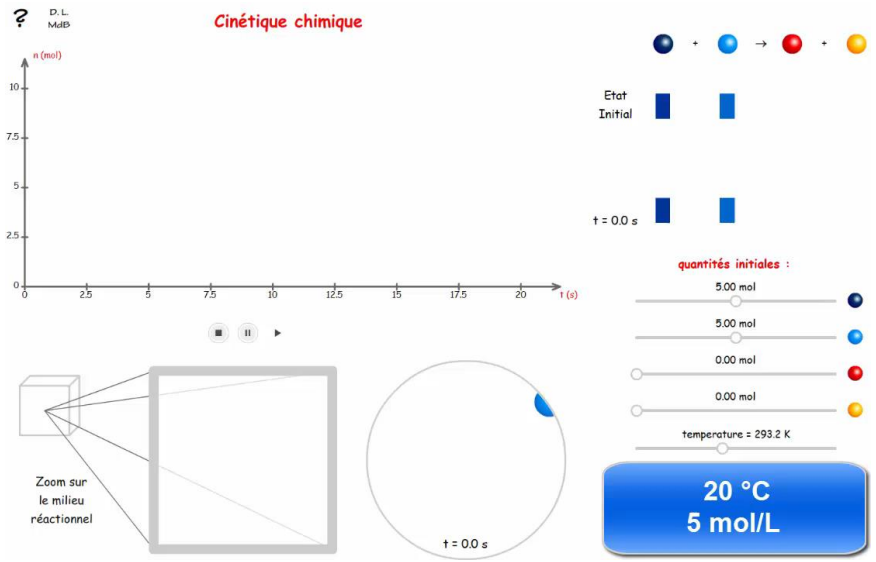
	$2I^-_{(aq)}$ +	$S_2O_8^{2-}{}_{(aq)}$ =	$I_{2\,(aq)}$ +	$2SO_4^{2-}{}_{(aq)}$
t_i	(excès)	n_0	0	0
t	(excès)	n_0-ξ	ξ	2ξ
t_f	(excès)	n_0-$\xi_f = 0$	$\xi_f = n_0$	$2\xi_f = 2n_0$

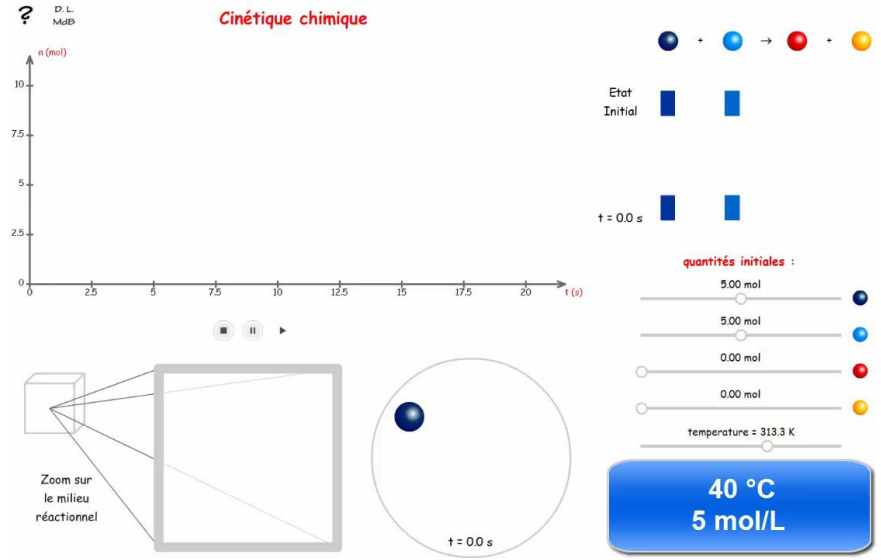
$$v = \frac{1}{V}\frac{d\xi}{dt} = -\frac{1}{2}\frac{d[I^-]}{dt} = -\frac{d[S_2O_8^{2-}]}{dt} = \frac{d[I_2]}{dt} = \frac{1}{2}\frac{d[SO_4^{2-}]}{dt}$$

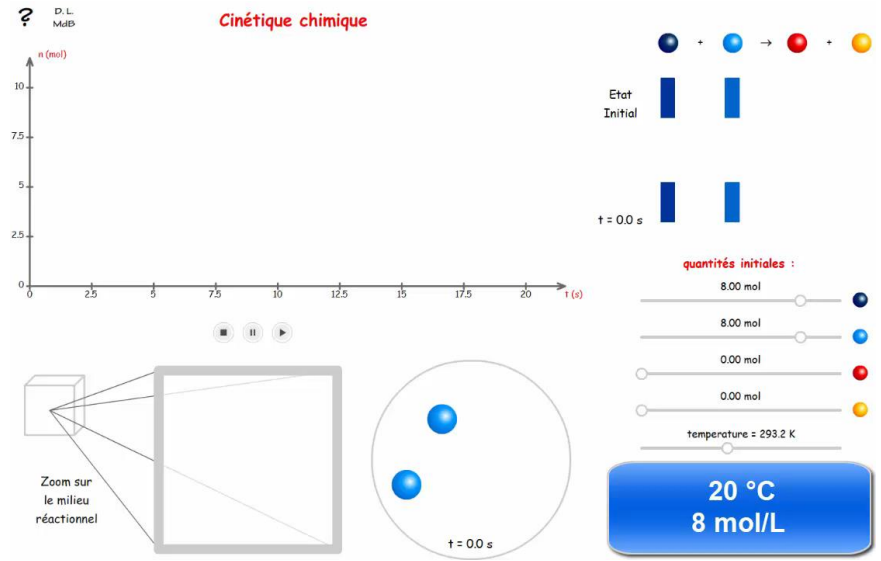
Réaction du type $\alpha A \rightarrow \beta B$

Ordre	Vitesse $(-\frac{1}{\alpha}\frac{d[A]}{dt})$	Concentration en réactif	$t_{1/2}$	Unité de k
0	k	$[A](t) = [A]_0 - \alpha kt$	$[A]_0/(2\alpha k)$	$mol.L^{-1}.s^{-1}$
1	$k[A]$	$[A](t) = [A]_0 e^{-\alpha kt}$	$\ln(2)/(\alpha k)$	s^{-1}
2	$k[A]^2$	$[A](t)^{-1} = [A]_0^{-1} + \alpha kt$	$1/([A]_0 \alpha k)$	$L.mol^{-1}.s^{-1}$

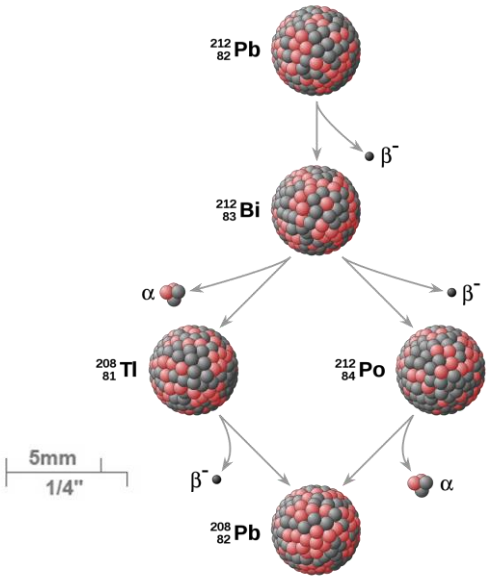
Facteurs cinétiques







Conclusion


$^{212}_{82}Pb$
β^-
$^{212}_{83}Bi$
α
β^-
$^{208}_{81}Tl$
$^{212}_{84}Po$
5mm
1/4"
β^-
α
$^{208}_{82}Pb$