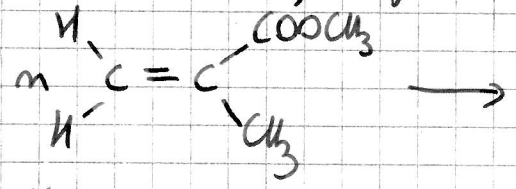
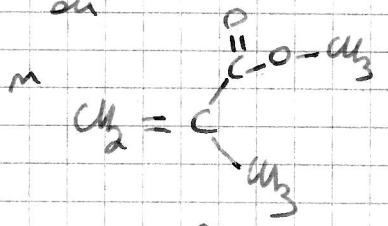
Sciences p107 [1] PMMA Polyméthylméthacrylate

équation de polyaddition

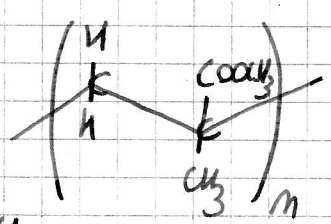


ou

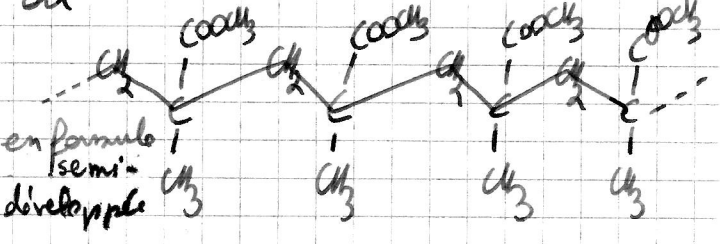


ou

écriture en motif répété

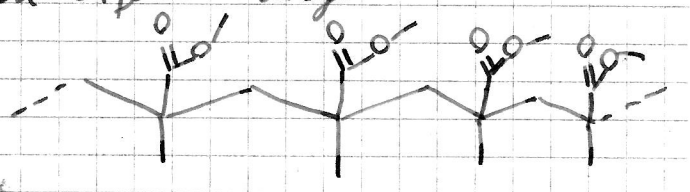


ou écriture en chaîne



en formule semi-développée

ou en formule abrégée

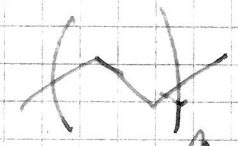


[2]

dépôt de polymérisation

$$n = \frac{\text{masse molaire moyenne du polymère}}{\text{masse molaire du monomère}} = \frac{300000\ g/mol}{28\ g/mol} = 10714$$

polyéthylène

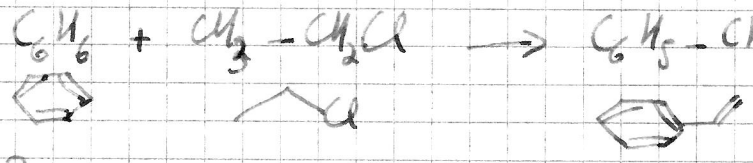


monomère

$M_{C_2H_4} = 28\ g/mol$

[3]

nombres stœchiométriques



$C_6H_6 + CH_3-CH_2Cl \rightarrow C_6H_5-CH=CH_2 + HCl + H_2$

? $m = 1\,T = 1000000\ g$

$/M = 78\ g/mol$

$m = 1\,T = 1000000\ g$

n_0	$n = 12820,5\ mol$	0	
Δn	$-1.12820,5$	$+1.12820,5$	
n_f	0	$n_f = 12820,5\ mol$	

$\times M = 104\ g/mol$

$m = 1580435\ g = 1,58\,T$

4

1000 $CH_2 = CH_2 \longrightarrow (-CH_2-CH_2-)_{1000}$

éq. polyaddition

5 a) b)

éq. polyaddition

$n\ CH_2=CH(CH_3) \longrightarrow (-CH_2-CH(CH_3)-)_n$

propène

ou

$\ldots CH_2-CH(CH_3)-CH_2-CH(CH_3)-CH_2-CH(CH_3)\ldots$

c) combustion

$(-CH_2-CH(CH_3)-)_{3000} + 13500\ O_2 \longrightarrow 9000\ CO_2 + 9000\ H_2O$

$(C_3H_6)_{3000}$

$C_{9000}H_{18000}$

d) $m = 1,1.10^6\ T$

$= 1,1.10^{12}\ g$

$\downarrow M_{C_{9000}H_{18000}} = 126000\ g/mol$

no	$n = 8730159\ mol$	0
$\pm\Delta n$	-1.8730159	$+9000.8730159$
nf	0	$n = 7,86.10^{10}\ mol$

$\downarrow M_{O_2} =$

$m = 3,46.10^{12}\ g$

$= 3,46.10^6\ T$

e) Accumulation de CO_2 dans l'atmosphère augmente l'effet de serre.

f) Pouvoir thermique 1kg de combustible libère $5.10^7\ J$

$\times 1,1.10^9$

$1,1.10^6\ T$

$= 1,1.10^9\ kg$

$\times 1,1.10^9$

$5,5.10^{16}\ J$

$= 5,5.10^{10}\ MJ$