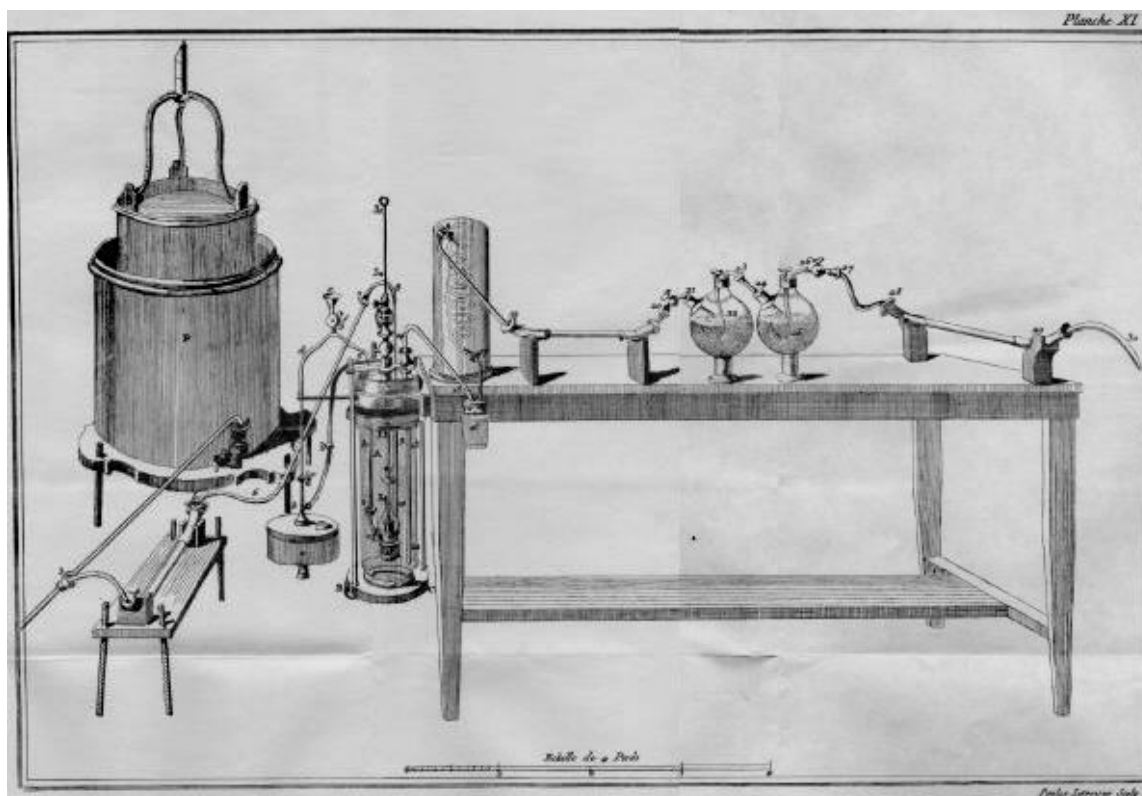
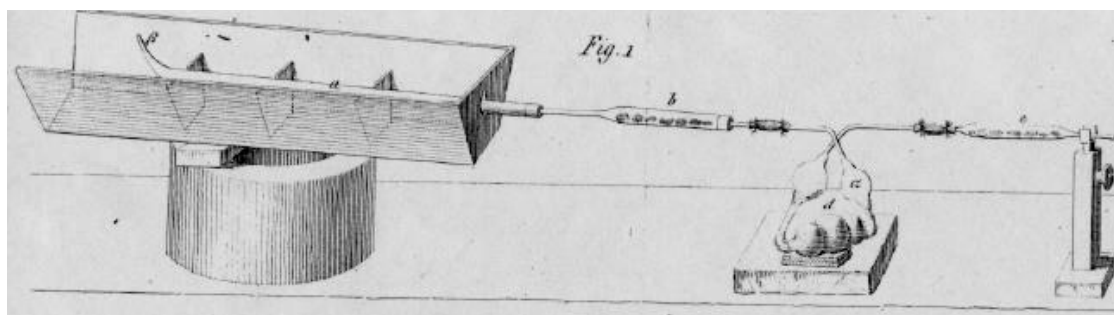
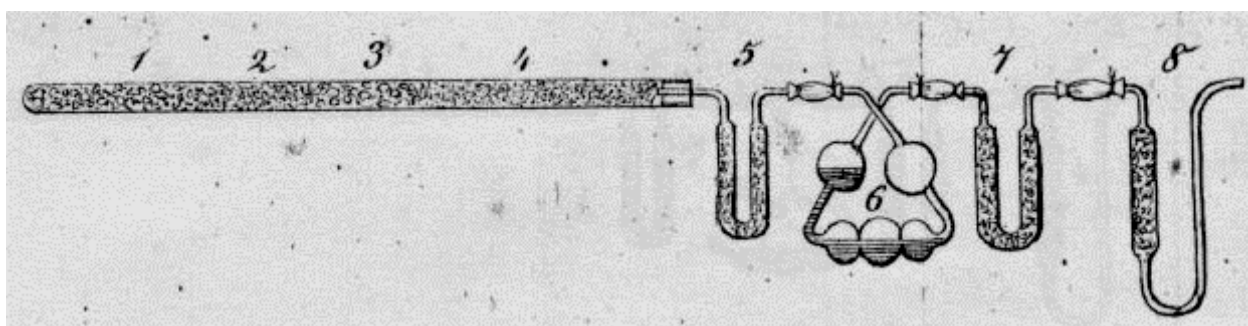




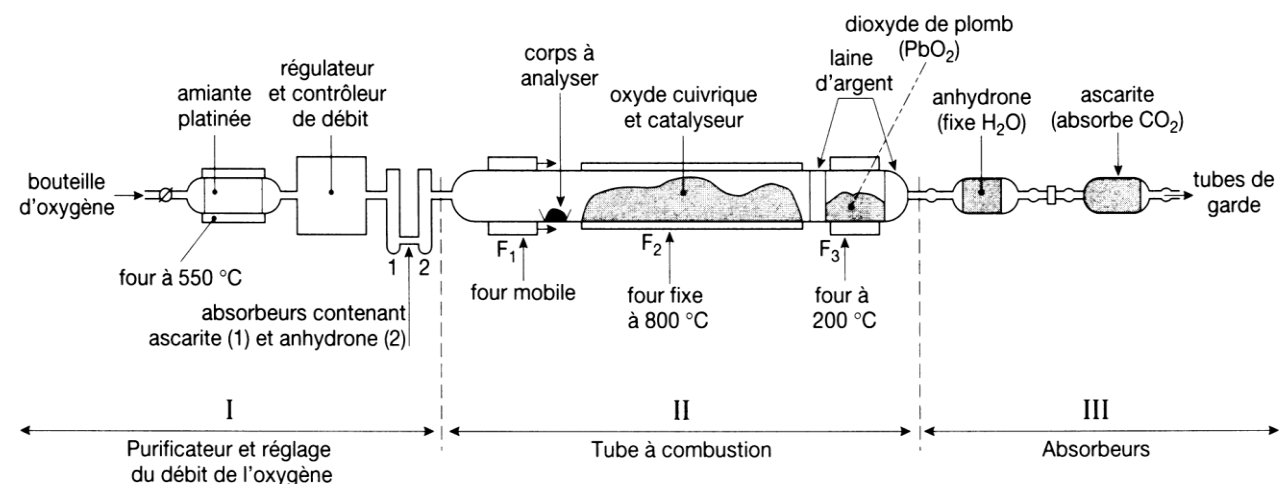
Appareil de microanalyse des huiles par Lavoisier (1780 env.)



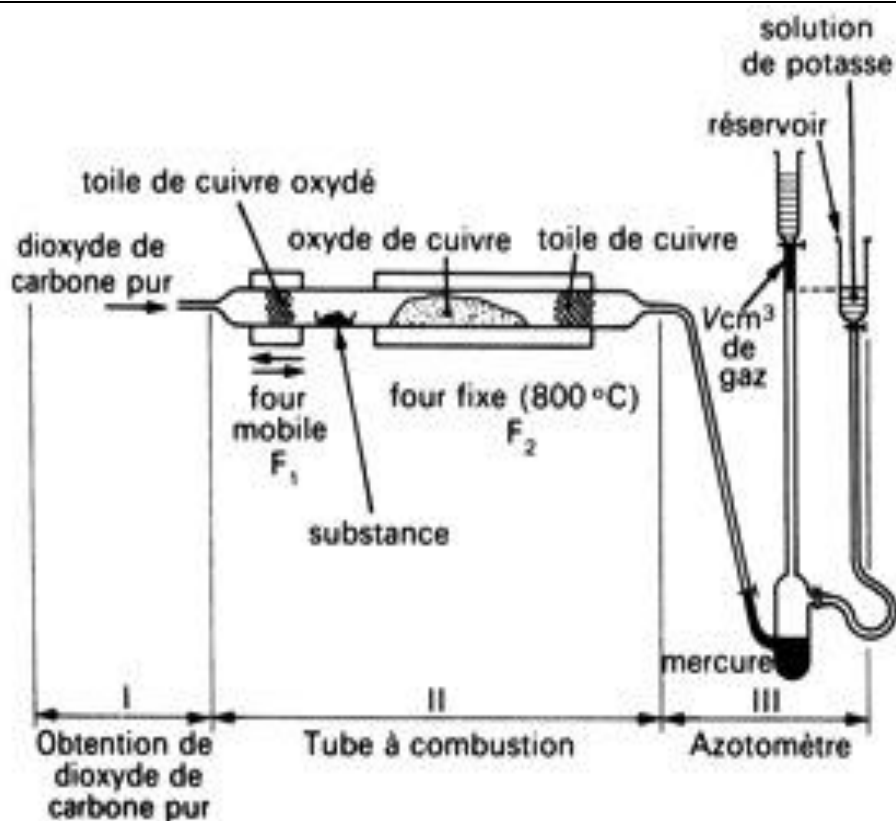
Appareil simplifié de Liebig



Amélioration de Dumas



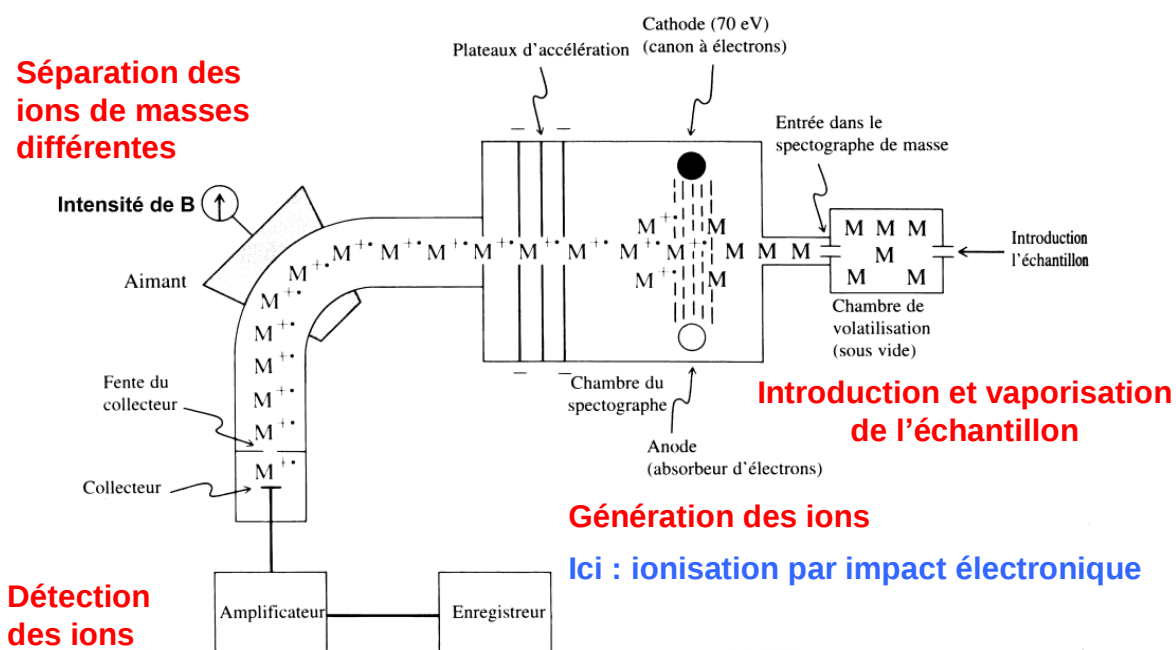
Principe des appareils de microanalyse (pour C et H)



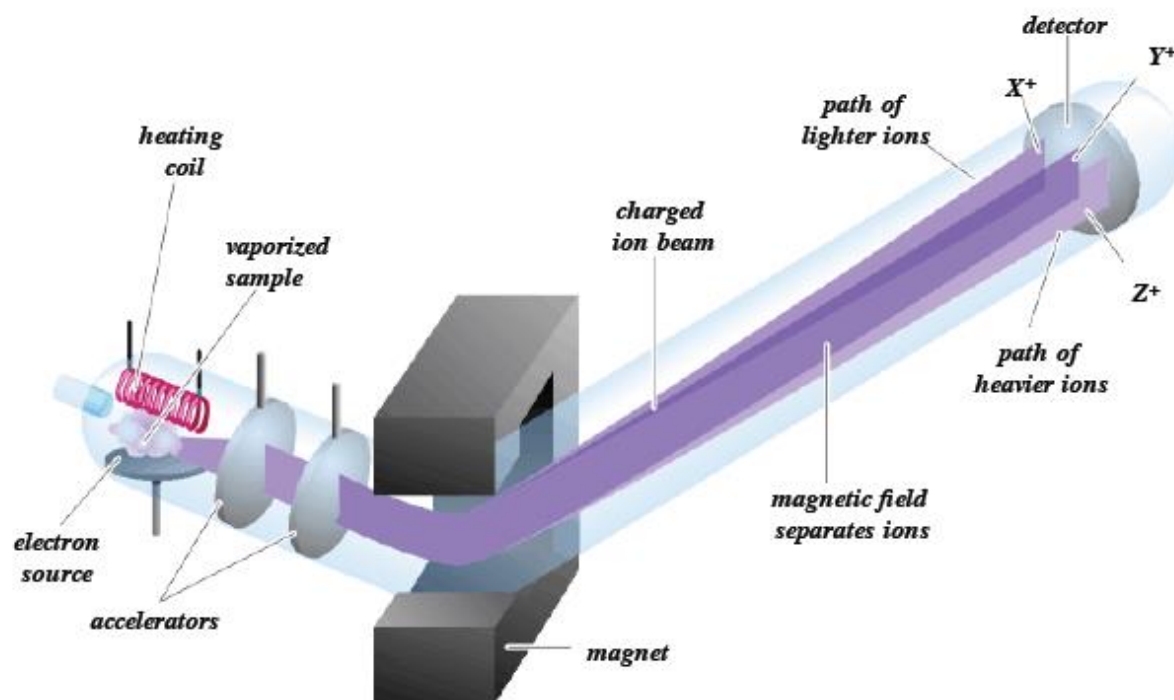
Principe de l'appareillage (méthode de Dumas, N)



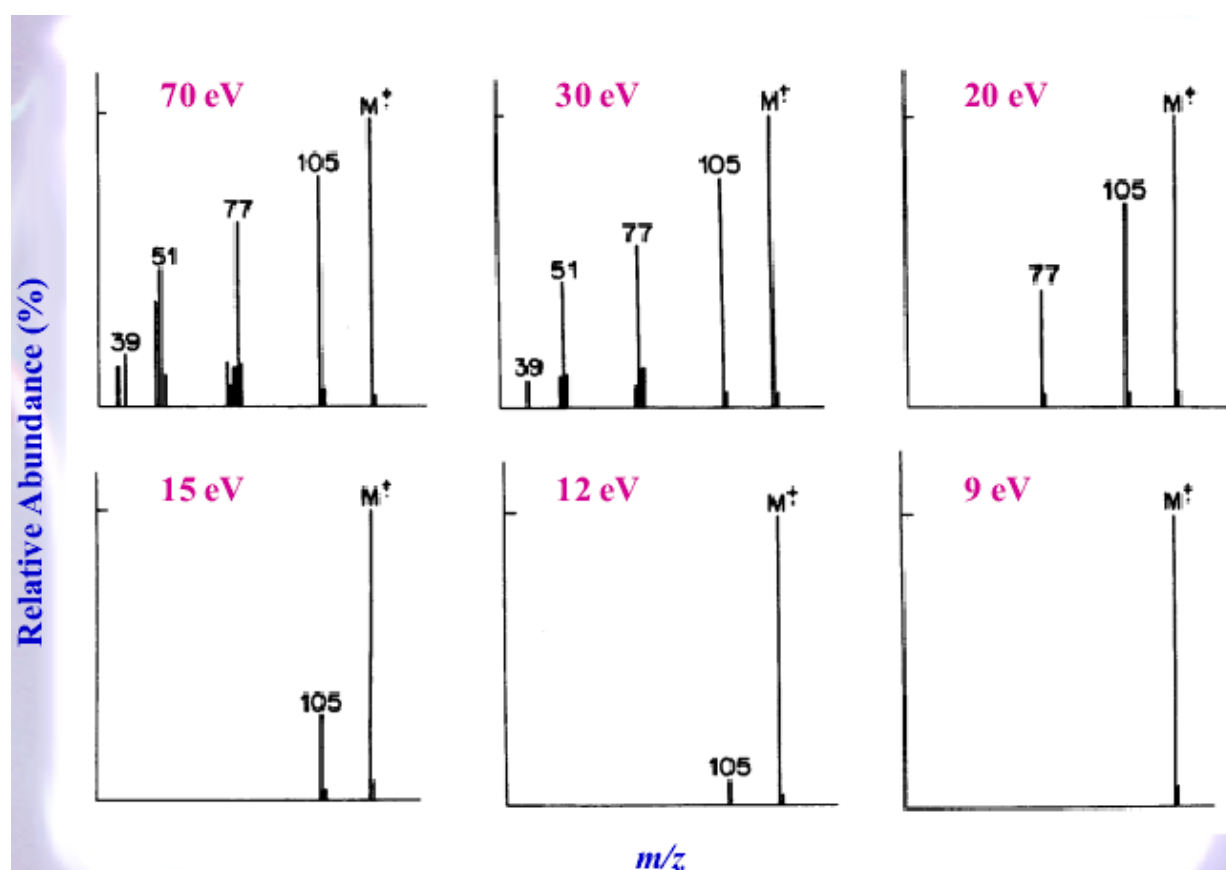
Appareil utilisant la méthode de Kjeldahl (1883)



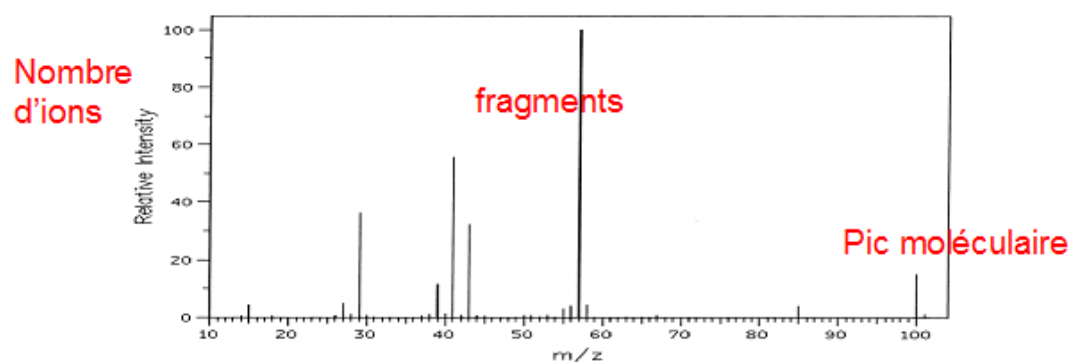
Principe de fonctionnement d'un spectromètre de masse



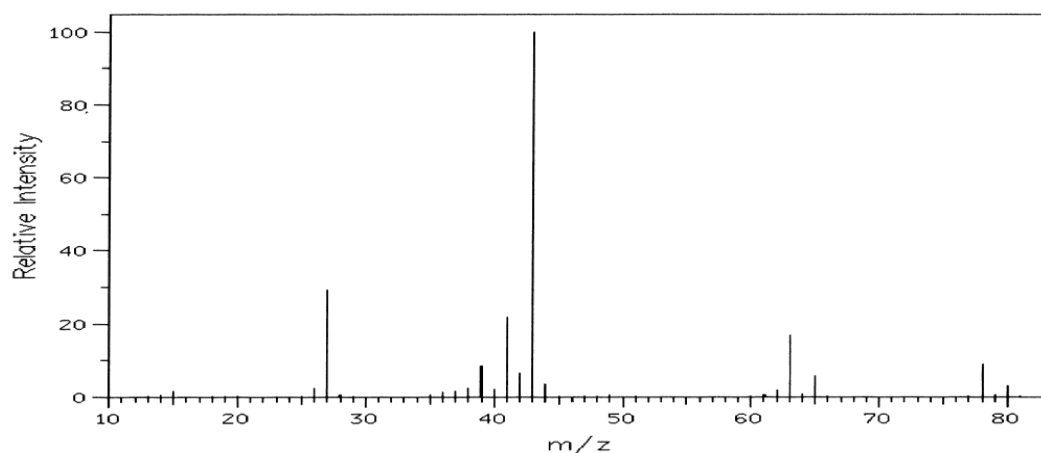
Vision 3D d'un spectromètre de masse avec analyseur à secteur magnétique



Influence de l'énergie du faisceau d'électrons permettant l'ionisation



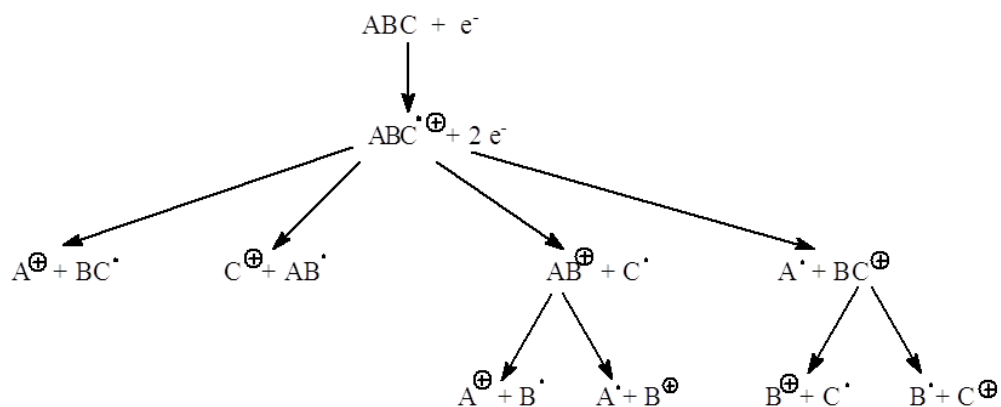
Informations lues sur un spectre de masse



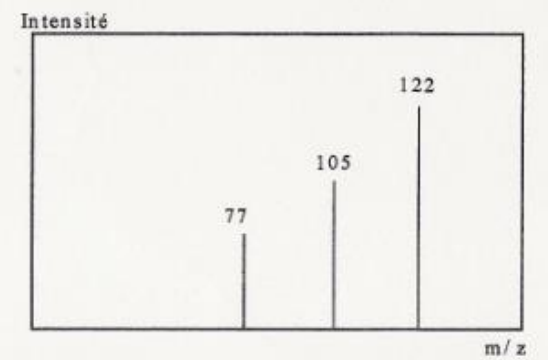
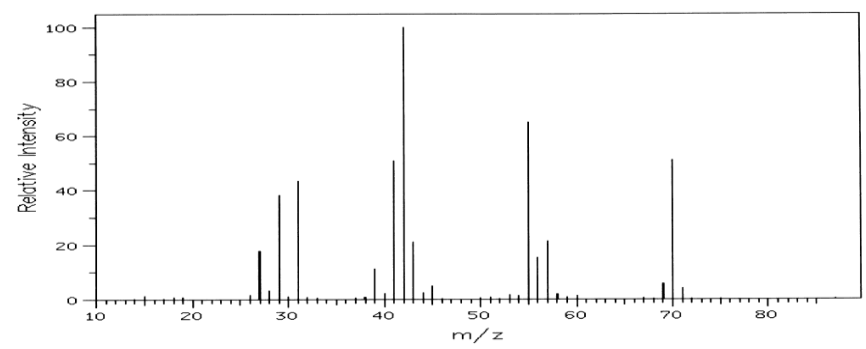
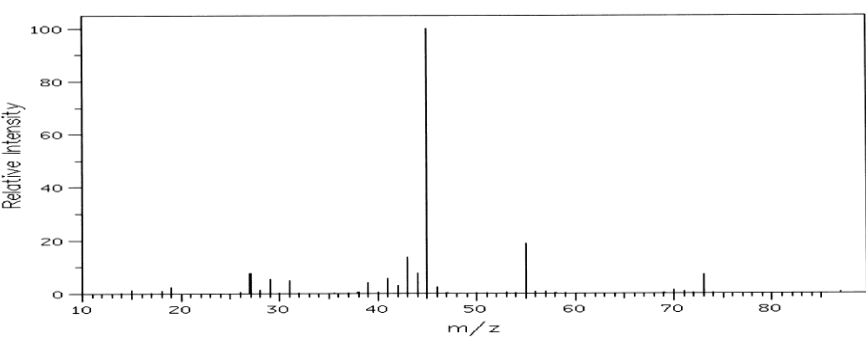
Spectre de masse du 2-chloropropane, $M = 78,5 \text{ g.mol}^{-1}$

Isotopes légers	Abondance naturelle%	Isotopes lourds	Abondance naturelle%		Abondance naturelle%
^1H	99,985	^2H	0,015		
^{12}C	98,893	^{13}C	1,107		
^{14}N	99,64	^{15}N	0,36		
^{16}O	99,759	^{17}O	0,037	^{18}O	0,204
^{32}S	95,0	^{33}S	0,76	^{34}S	4,2
^{19}F	100				
^{35}Cl	75,8			^{37}Cl	24,2
^{79}Br	50,537			^{81}Br	49,463
^{127}I	100				

Abondance naturelle des isotopes



Etude de fragments : obtention d'informations sur la structure de l'espèce étudiée

	Acide benzoïque
	Pentan-1-ol
	Pentan-2-ol