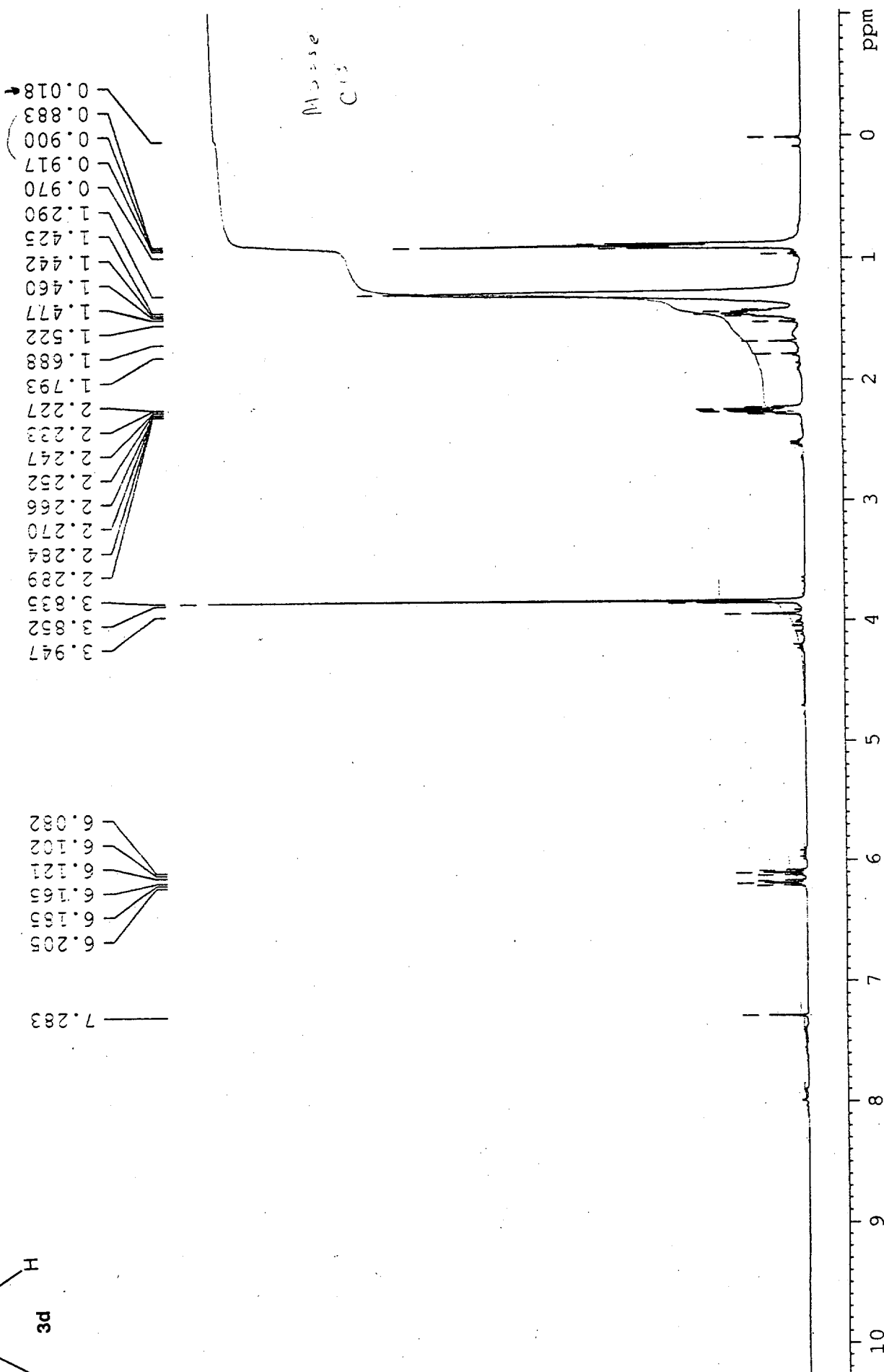
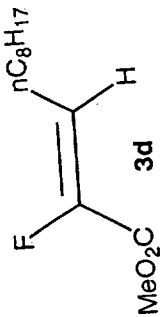


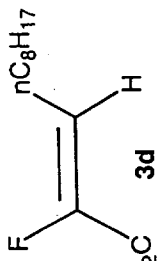
## *Supporting information*

### **Typical Experimental Procedure**

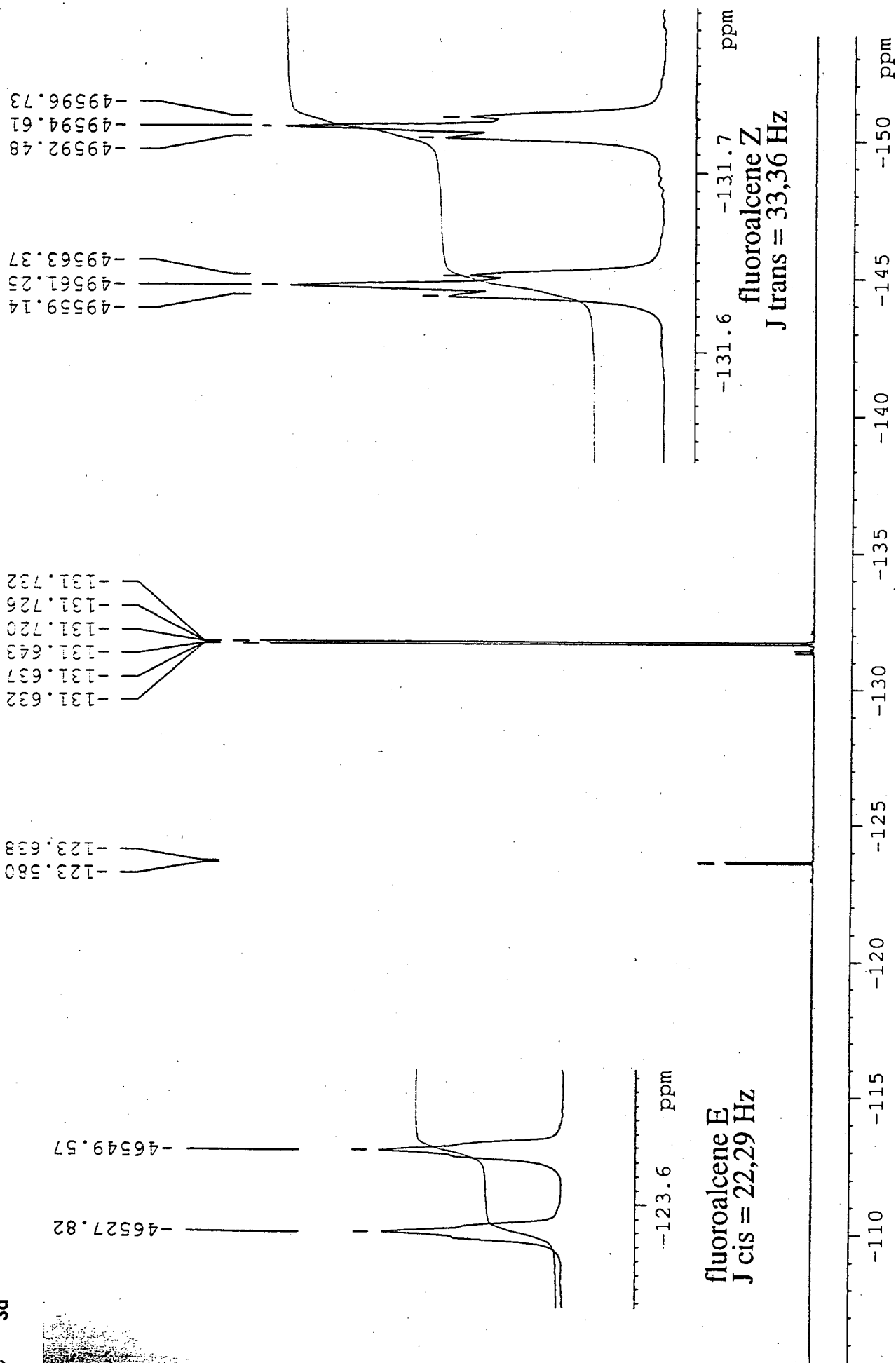
**General procedure. Synthesis of (Z)  $\alpha,\beta$ -unsaturated esters 3a-g from methyl *tert*butylsulfanyl fluoroacetate (5).** Fluorosulfide **5** (1 equiv) was slowly added to a freshly prepared solution of LDA (1.1 equiv) cooled at  $-78^\circ\text{C}$ . After 30 mn of stirring at  $-78^\circ\text{C}$ , the aldehyde (1 equiv) was slowly added. The reaction mixture was stirred 2 hours at  $-78^\circ\text{C}$  and hydrolyzed by addition of a solution of  $\text{NH}_4\text{Cl}$ . The solution was extracted with  $\text{CH}_2\text{Cl}_2$ , washed with a solution of NaCl, dried ( $\text{MgSO}_4$ ) and concentrated. The crude oil was diluted in  $\text{CH}_2\text{Cl}_2$  and the solution was cooled at  $-40^\circ\text{C}$ . *m*CPBA (1equiv) was added and the reaction mixture was stirred over 30 mn. The products were extracted with  $\text{CH}_2\text{Cl}_2$  and the organic layer was washed with a solution of  $\text{NaHCO}_3$  (3x) ; NaCl (1x) and dried. After concentration, the products **1** and **4** were diluted in  $\text{CH}_2\text{Cl}_2$  at room temperature and sulfuryl chloride (2 equiv) was added. The reaction mixture was stirred 30 mn and the excess of sulfuryl chloride was evaporated. The crude was stirred at room temperature until the complete formation of (Z) fluoroalkenes **3** by  $^{19}\text{F}$  NMR. The product was purified by a distillation (3a and 3c-d) or by a column chromatography (3b and 3e-g ; petroleum ether).

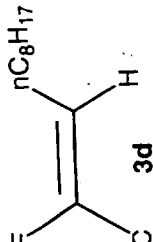
FLUOROALCENE R = OCTYL Ref C9



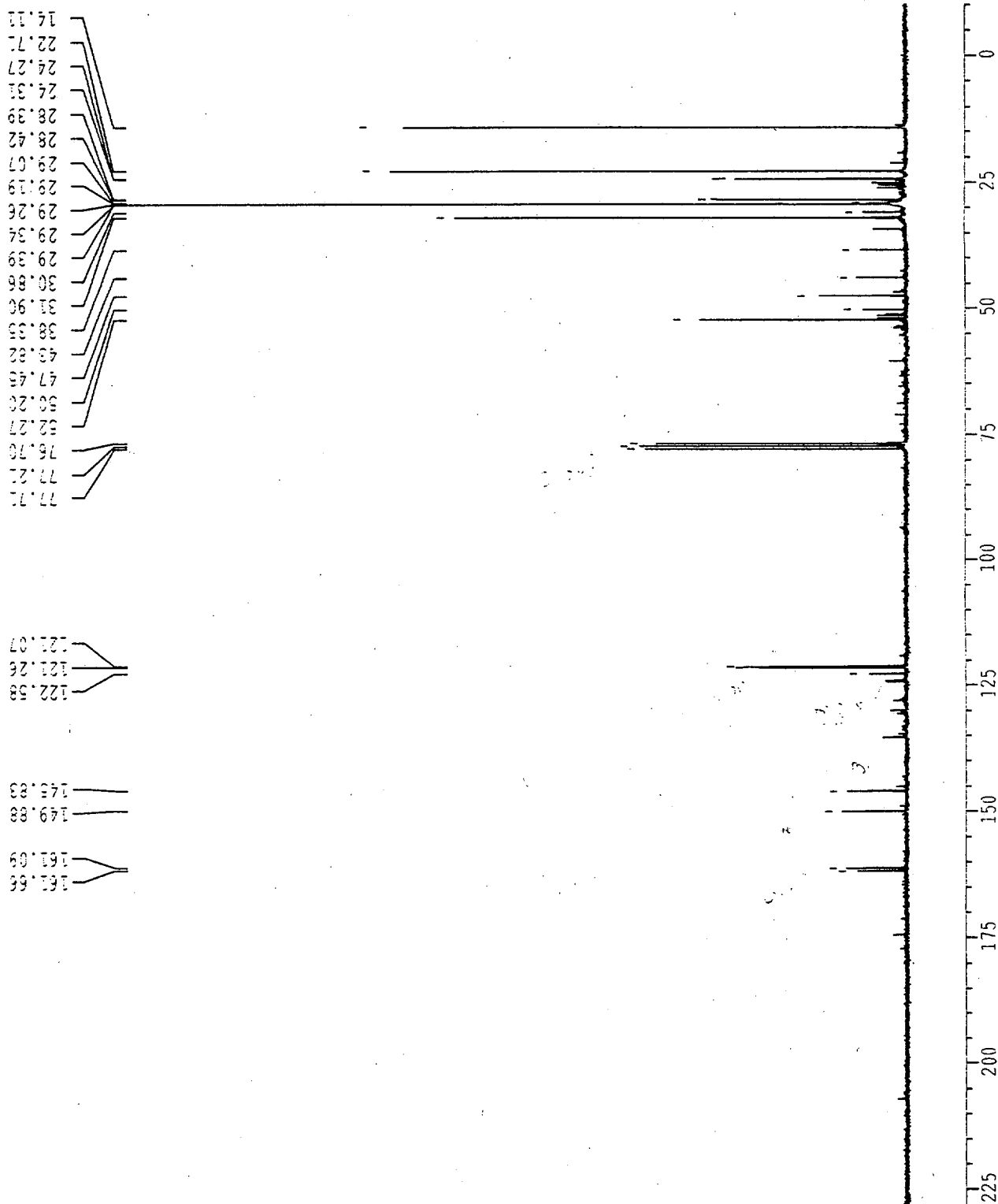


FLUOROALKENE R= Octyl ref C9

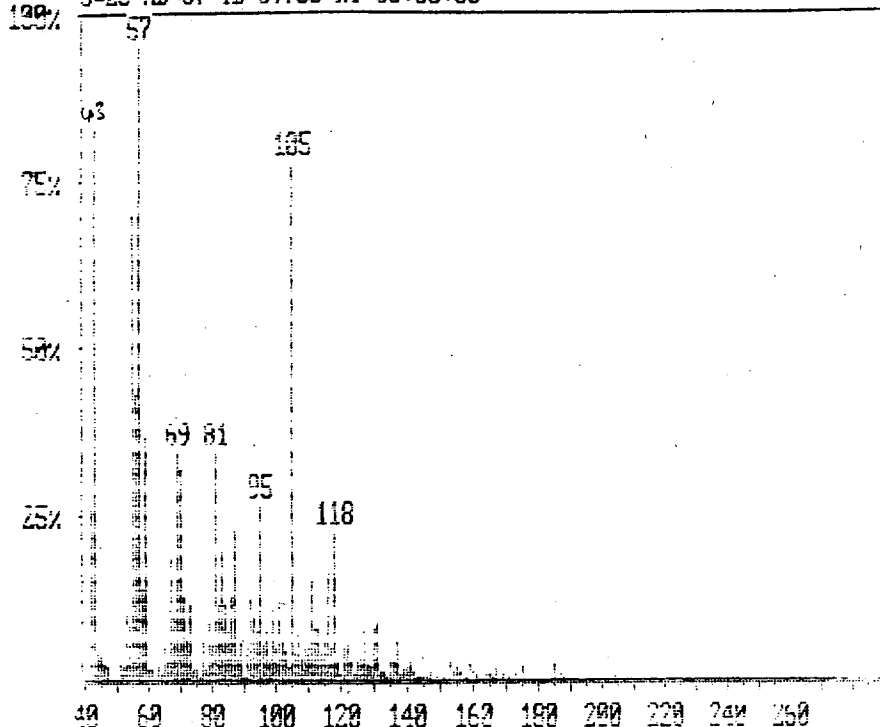




**Current Data Parameters**  
 NAME alcnone  
 EXPNO 11  
 PROCNO 1  
  
**F2 - Acquisition Parameters**  
 Date\_ 980728  
 Time 11.36  
 INSTRUM spect  
 PROUID 5 mm QNP 1H/1  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDC13  
 NS 1024  
 DS 0  
 SWH 16339.869 Hz  
 F1FRES 0.249327 Hz  
 AQ 2.0054517 sec  
 RG 1149.4  
 DM 30.600 use  
 DE 10.00 use  
 TE 300.0 K  
 D11 0.0300000 sec  
 PL12 18.00 dB  
 CPOPRG2 waltz16  
 PCPD2 100.00 use  
 SFO2 250.1312506 MHz  
 NUC2 1H  
 PL2 -6.00 dB  
 D1 2.0000000 sec  
 P1 5.00 use  
 SFO1 62.9027614 MHz  
 NUC1 13C  
 PL1 -6.00 dB  
  
**F2 - Processing parameters**  
 SI 32768  
 SF 62.8952302 MHz  
 WDW EM  
 SSB 0  
 LB 0.80 Hz  
 GB 0  
 PC 1.40  
  
**1D NMR plot parameters**  
 CX 22.00 cm  
 FIP 249.624 ppm  
 F1 15700.15 Hz  
 F2P -10.171 ppm  
 F2 -639.72 Hz  
 PPMCM 11.80887 ppm  
 HZCM 742.72131 Hz/

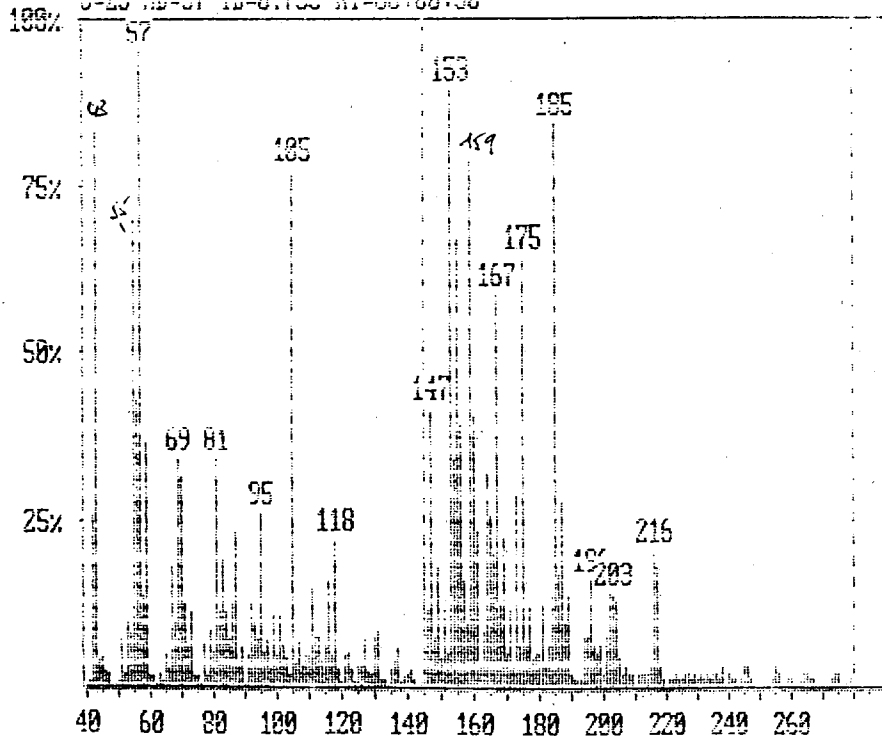


David CHEVRIE ref: DC - 40 - /J.MERZY 15698  
 Fichier: PCHEV05.SPE Date 11-16-98 Heure 15:22:05  
 S=25 MB=57 IB=0.735 RT=00:00:30

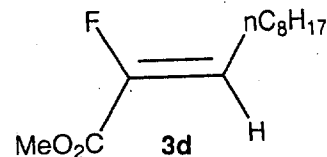


DS=41 ES=440 DA=40 FA=200 N=0 Z=2 S=0.0 Fact1 -> 1 \*1  
 Meta Quantas ) S=25 F=0 Pns=1 Tot=1

David CHEVRIE ref: DC - 40 - /J.MERZY 15698  
 Fichier: PCHEV05.SPE Date 11-16-98 Heure 15:22:05  
 S=25 MB=57 IB=0.735 RT=00:00:30



57  $\text{C}_8\text{H}_{17}\text{CH}_2\text{CH}_2\text{C}_2^+$



DS=41 ES=440 DA=40 FA=200 N=0 Z=2 S=0.0 Fact1 [145-1200] \*32

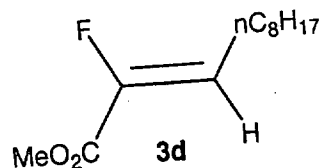
Fichier: PCHEV05.SPE

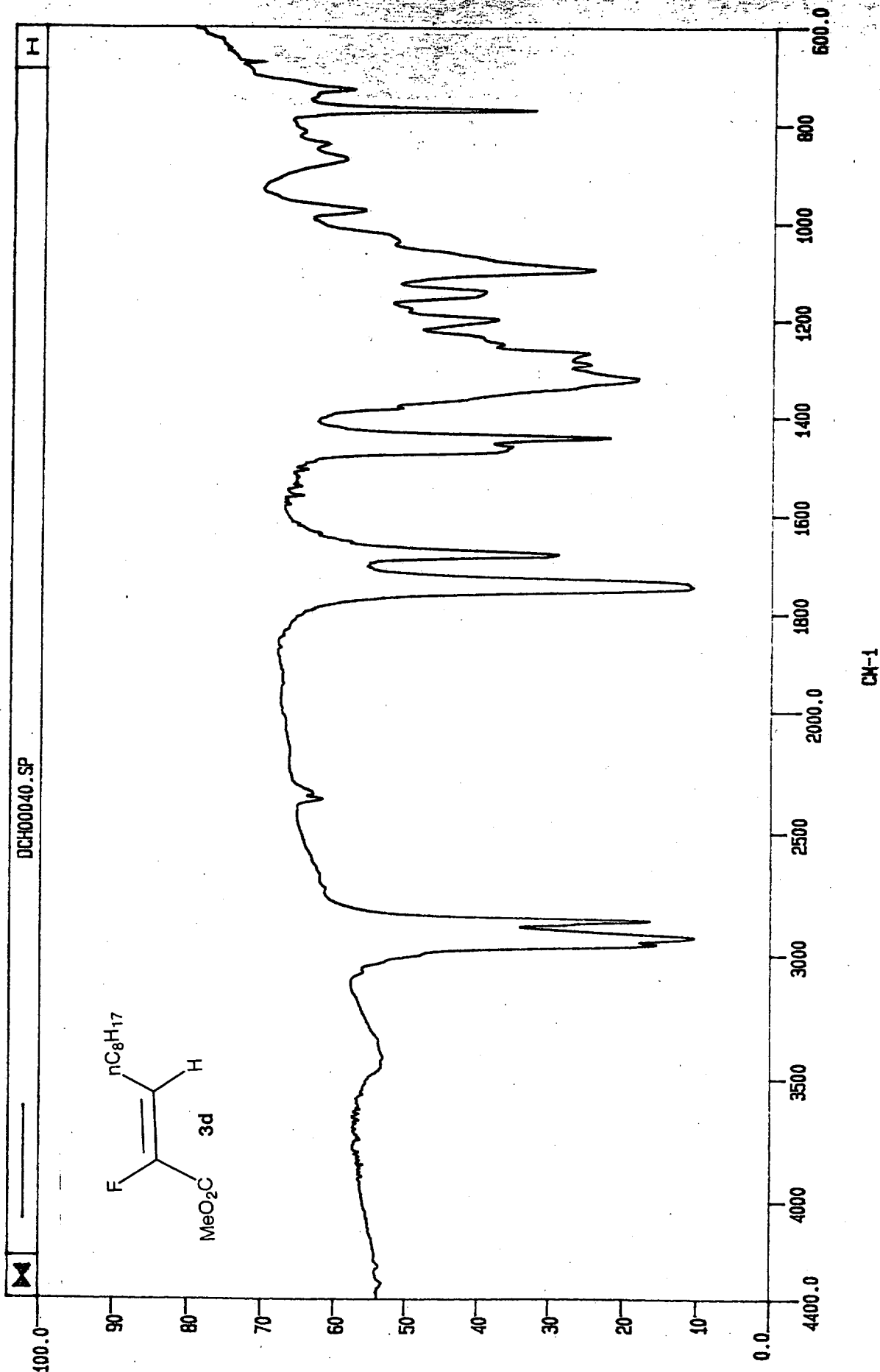
Date 11-16-99

Heure 13:22:03

S=25 MS=57 IR=0.735 RT=00:00:30

Masse	Int (%)	Masse	Int (%)	Masse	Int (%)	Masse	Int (%)
41	0.90	42	25.91	43	83.06	44	4.22
45	4.39	46	2.29	47	2.13	48	0.23
49	0.33	50	0.93	51	7.14	52	1.89
53	9.63	54	8.04	55	69.77	56	42.96
57	100.00	58	13.62	59	36.54	60	1.79
61	1.93	62	0.37	63	1.96	64	0.70
65	4.72	66	3.02	67	17.94	68	9.70
69	33.89	70	31.66	71	12.29	72	6.21
73	11.13	74	1.76	75	1.73	76	0.50
77	6.25	78	1.53	79	8.41	80	5.98
81	32.89	82	11.40	83	19.27	84	11.26
85	7.34	86	12.43	87	23.26	88	3.39
89	5.85	90	0.53	91	4.75	92	13.02
93	9.50	94	7.08	95	25.91	96	5.22
97	7.31	98	3.02	99	10.93	100	4.72
101	11.59	102	5.54	103	4.29	104	1.96
105	77.08	106	4.09	107	6.71	108	3.16
109	4.72	110	4.95	111	14.65	112	7.44
113	7.48	114	3.99	115	6.81	116	16.25
117	1.25	118	21.93	119	2.72	120	0.80
121	4.65	122	5.15	123	2.62	124	0.90
125	3.29	126	3.59	127	7.21	128	2.49
129	2.19	130	7.57	131	6.37	132	1.23
133	1.43	134	0.60	135	2.69	136	3.92
137	5.85	138	1.02	139	1.66	140	2.23
141	2.99	142	1.10	143	0.23	144	0.27
145	0.60	146	0.37	147	1.30	148	0.23
149	0.55	150	0.12	151	0.27	152	0.17
153	2.79	154	1.06	155	2.09	156	1.23
157	0.50	158	0.20	159	2.45	160	1.26
161	0.72	163	0.27	164	1.00	165	0.30
166	0.62	167	1.33	168	0.40	169	0.70
170	0.17	171	0.27	173	0.90	174	0.20
175	1.99	176	0.20	177	0.40	178	0.12
179	0.17	180	0.17	181	0.40	183	0.20
184	0.43	185	2.62	186	0.52	187	0.86
188	0.30	189	0.43	194	0.22	195	0.23
195	0.50	197	0.20	198	0.17	199	0.20
201	0.23	202	0.47	203	0.43	204	0.40
205	0.13	216	<u>0.63</u>	217	0.55		



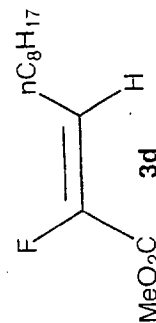


16 Filename: DCH00040.SP Date: 98/11/17 Time: 11:30:35.00

Resolution: 4.00 Operator:

File: CHEVRIE DCH00040 film NaCl

Bfilename	#pts	start	end	min	max	res	ord	acc	thresh
DCH00040.SP	1901	4400.00	600.00	10.34	79.90	4.00	%T	5	2.00
CHEVRIE DCH00040 film NaCl									
REF 4000.00	55.87	2000.00	67.50						
3416.0	53.00	2956.0	15.47	2926.0	10.34	2856.0	16.25	2360.0	61.74
1744.0	10.66	1678.0	28.92	1558.0	64.56	1506.0	64.01	1456.0	35.42
1438.0	22.02	1320.0	18.27	1288.0	24.77	1266.0	25.04	1246.0	36.81
1196.0	37.61	1140.0	39.29	1092.0	24.39	972.0	56.24	866.0	58.92
836.0	61.60	764.0	32.62	724.0	58.20	668.0	70.70		

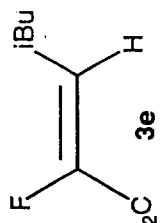


IR

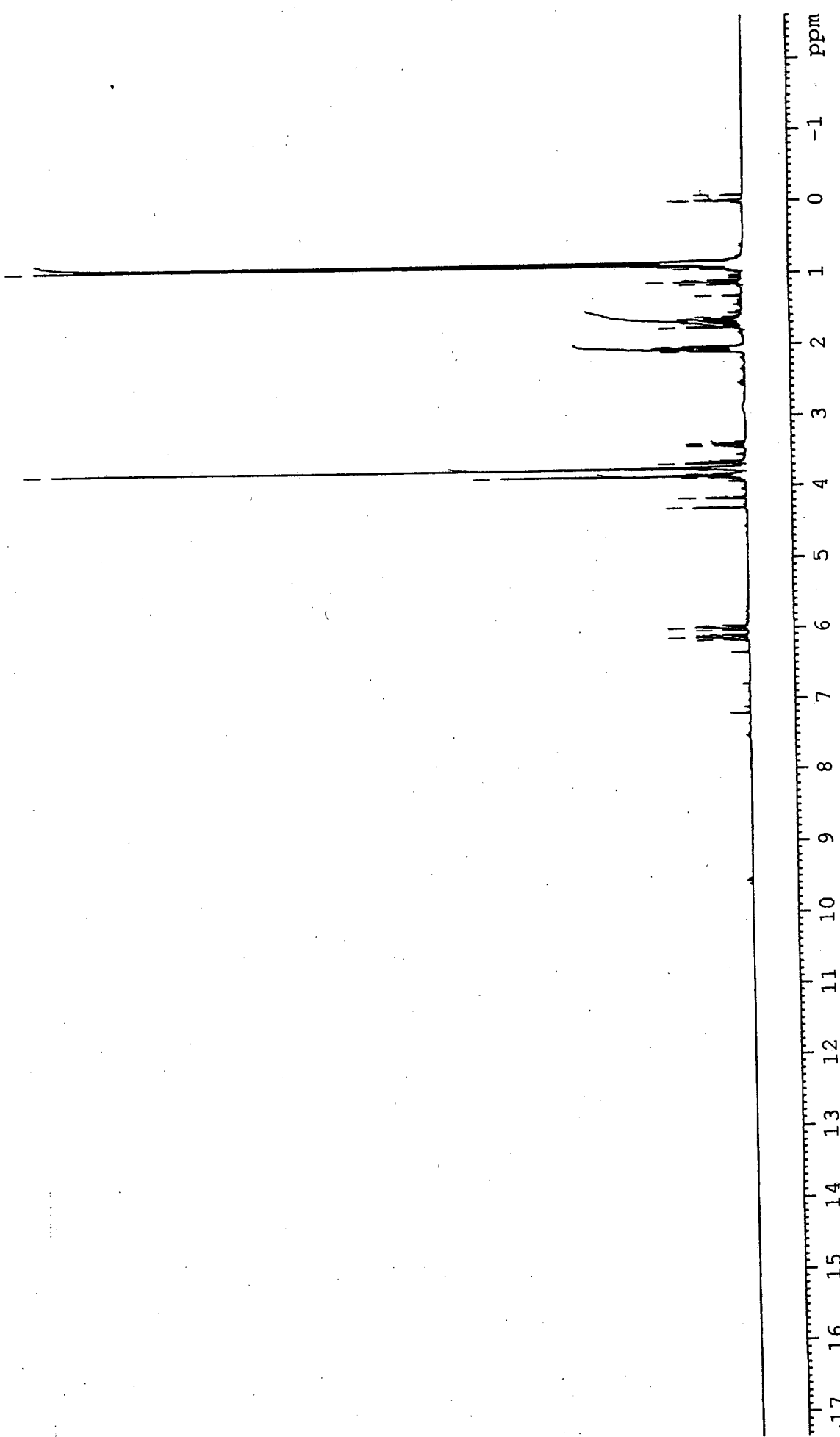
END 24 PEAK(S) FOUND

100

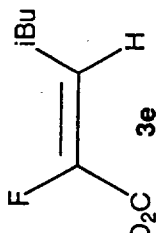




- 1543.57
- 1535.55
- 1527.52
- 1510.33
- 1502.31
- 1499.77
- 1494.29
- 1077.56
- 1042.95
- 1042.45
- 971.46
- 965.27
- 961.63
- 957.65
- 945.00
- 937.82
- 931.82
- 920.65
- 914.02
- 857.45
- 850.43
- 526.06
- 523.86
- 519.10
- 517.15
- 511.24
- 509.02
- 440.51
- 426.40
- 419.69
- 415.07
- 413.03
- 406.33
- 331.31
- 290.83
- 283.80
- 276.77



# Alcane (Isovaleraldehyde)



## isomere E

-122.521  
-122.615  
-131.137  
-131.278

-288335.32  
-288338.34

-122.5 ppm

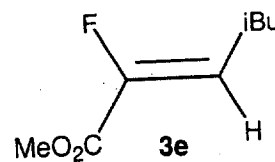
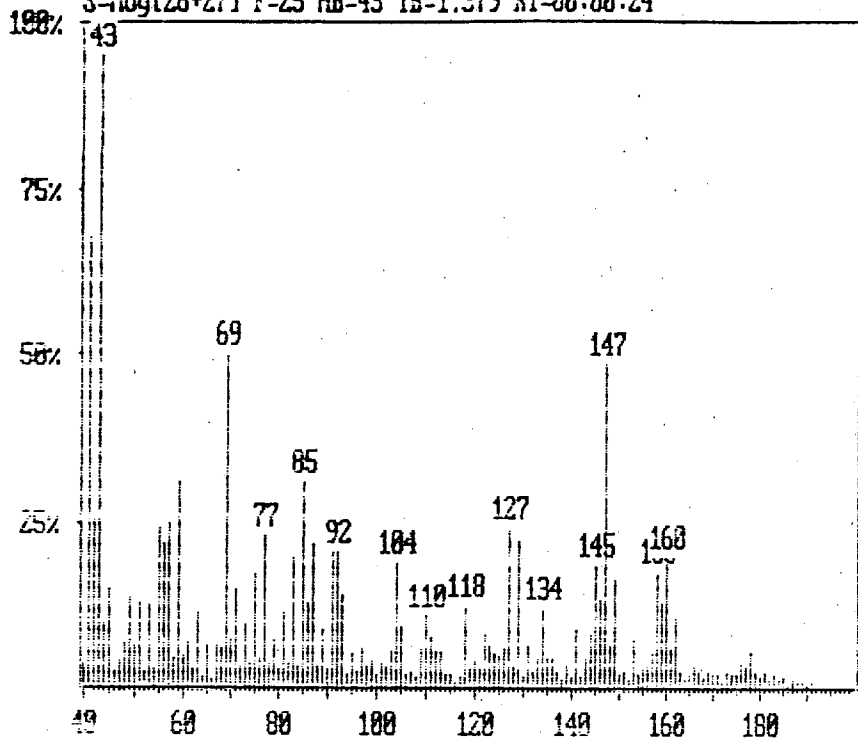
## isomere Z

-30864.00  
-30897.32

-131.2 ppm



David CHEURIE réf: DC - iBu - /J.MERGY 12298  
 Fichier: PCHEV03.SPE Date 10-14-98 Heure 15:28:17  
 S=Moy[26+27] F=25 MB=43 IB=1.379 RT=00:00:24



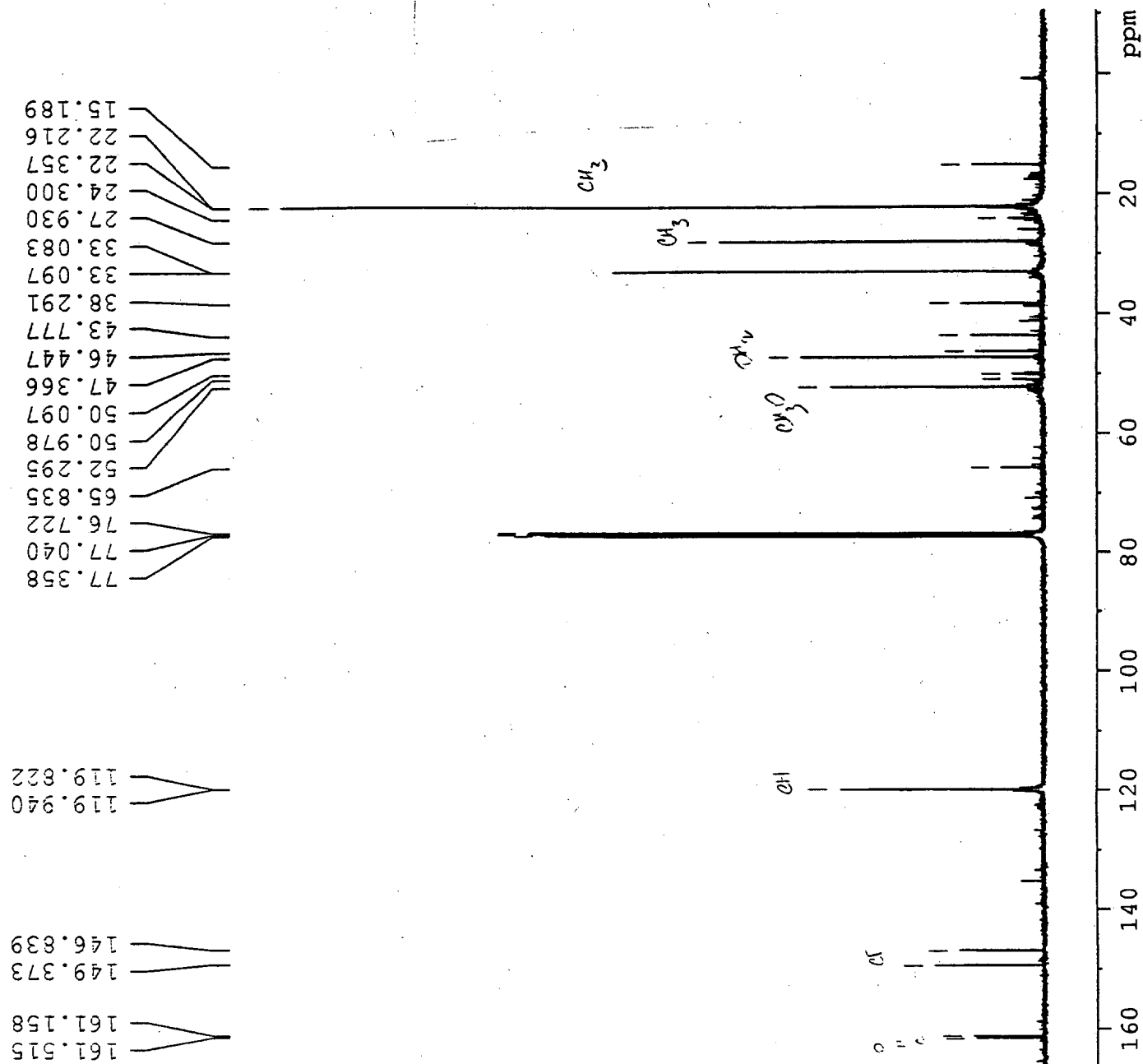
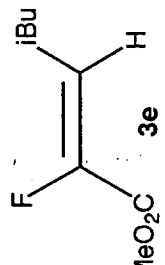
DS=40 FS=200 DA=40 FA=190 N=0 Z=3 S=0.0 Fact(-) ] \*1  
 Liste Spectres > S=Moy[26+27] F=25 Pos=1 Tot=1

127 0.0130

Fichier: PCHEV03.SPE Date 10-14-98 Heure 15:28:17  
 S=Moy[26+27] F=25 MB=43 IB=1.379 RT=00:00:24

Masse	Int (%)	Masse	Int (%)	Masse	Int (%)	Masse	Int (%)
41	67.77	42	25.24	43	100.00	44	9.58
45	14.74	48	6.92	49	13.50	50	6.50
51	12.88	53	12.60	55	24.07	56	21.65
57	24.88	59	30.81	61	6.92	63	11.06
65	6.35	67	6.39	69	5.86	69	49.22
70	7.17	71	15.03	73	9.94	75	17.17
77	22.80	79	7.33	81	11.10	83	19.49
85	30.74	86	12.85	87	21.66	89	9.99
91	20.35	92	20.41	93	14.11	97	6.12
103	5.59	104	18.74	105	9.31	109	6.02
110	10.88	111	7.66	112	5.52	113	5.77
118	12.18	122	8.16	123	6.95	126	6.11
127	23.84	129	22.11	131	6.55	134	11.84
141	8.97	144	8.11	145	18.39	146	13.17
147	48.55	148	6.25	149	15.28	152	7.26
159	17.36	159	13.03	160	19.68	161	6.02
162	10.64						

# Alcène (isovaleraldehyde)



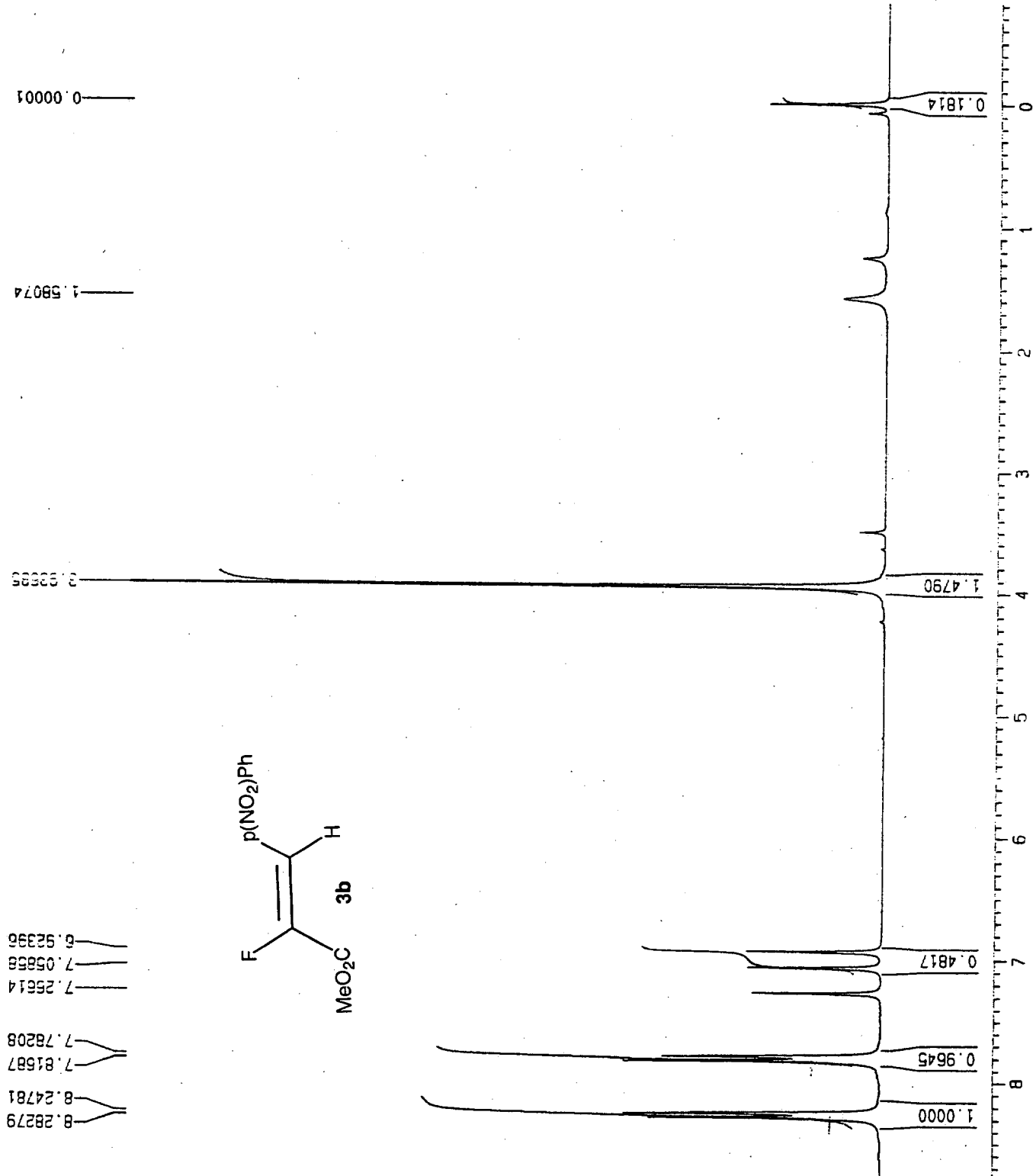
Current Date Parameters  
 NAME dc117.2  
 EXPNO 11  
 PROCNO 1

F2 - Acquisition Parameter  
 Date\_ 990324  
 Time 21.04  
 INSTRUM spect  
 PROBHD 5 mm QNP 1H/1  
 PULPROG zg30  
 TO 32768  
 SOLVENT CDCl3  
 NS 16  
 DS 0

SHH 4990.020 Hz  
 FIDRES 0.152283 Hz  
 AQ 3.2834036 s  
 RG 512  
 DM 100.200 u  
 DE 10.00 u  
 TE 300.0 K  
 D1 2.0000000 s  
 P1 7.50 u  
 SFO1 250.1318626 M  
 NUC1 1H  
 PL1 -6.00 d

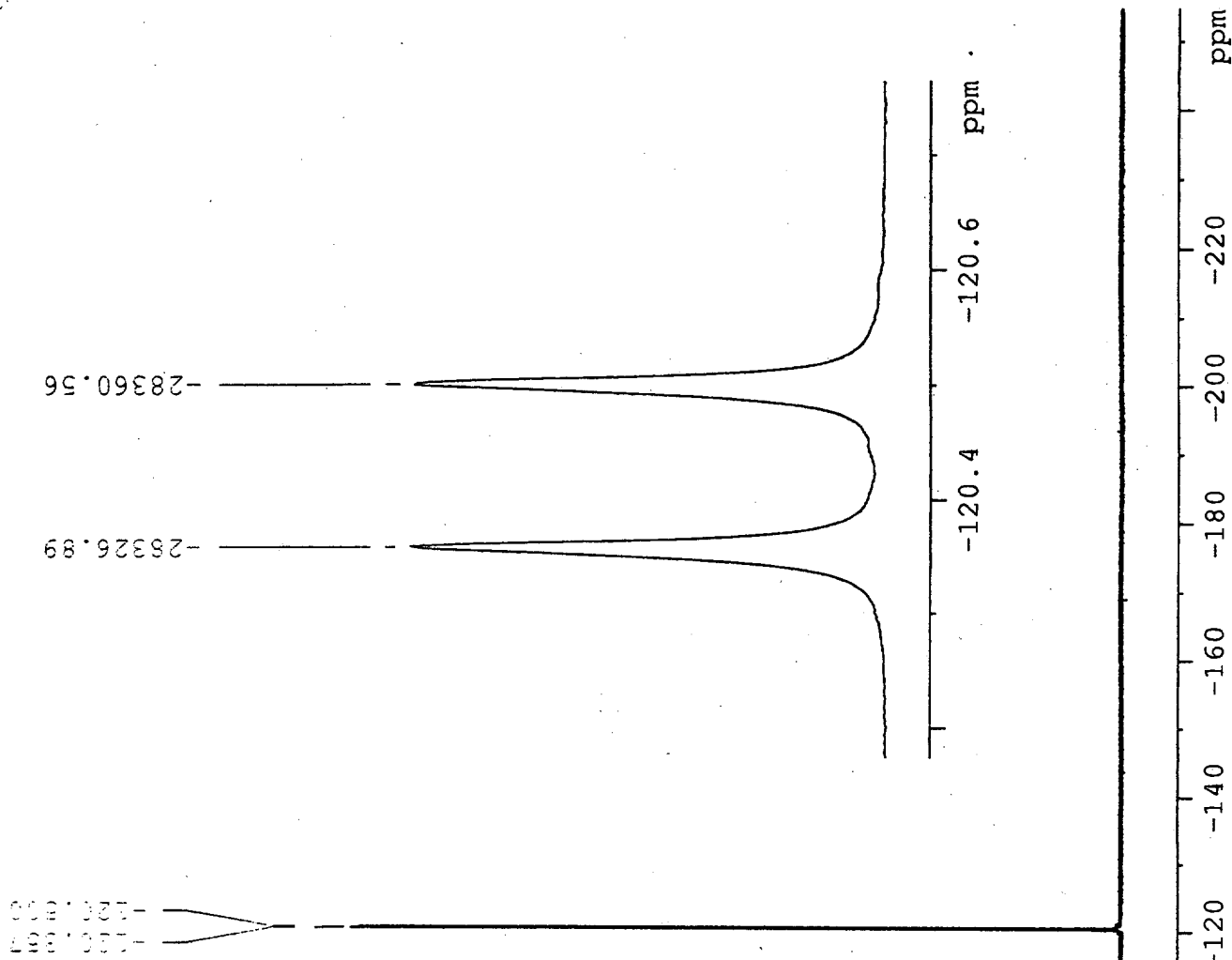
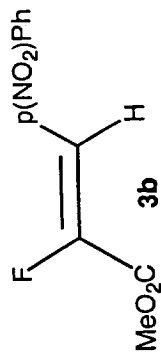
F2 - Processing parameters:  
 SI 16384  
 SF 250.1300052 M  
 MDW EN  
 SSB 0  
 LB 0.30 Hz  
 GB 0  
 PC 1.00

1D NMR plot parameters  
 CX 22.00 cr  
 FIP 9.634 pf  
 F1 2384.77 Hz  
 F2 -0.623 pf  
 PPHCM -205.88 Hz  
 HZCM 0.47078 pf  
 117.75711 Hz

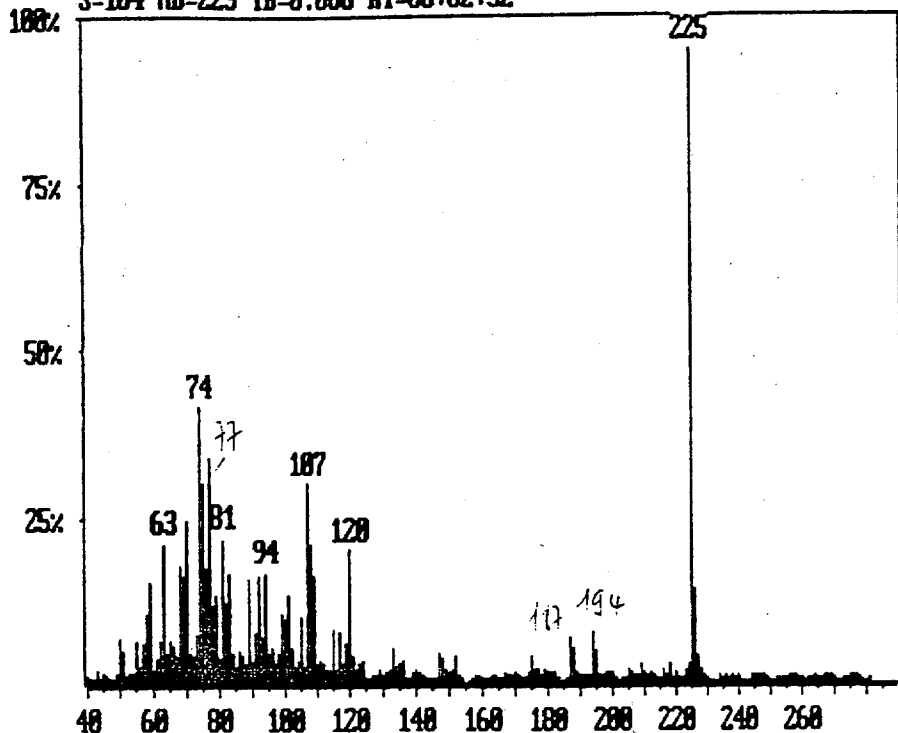
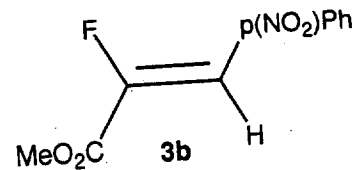


dc117.2

recristallisation dans methanol



David CHEVRIE réf: DC - 128 - /J.MERZY 18999  
 Fichier: PCHEV16.SPE Date 06-03-99 Heure 18:19:59  
 S=104 MB=225 IB=0.066 RT=00:02:32



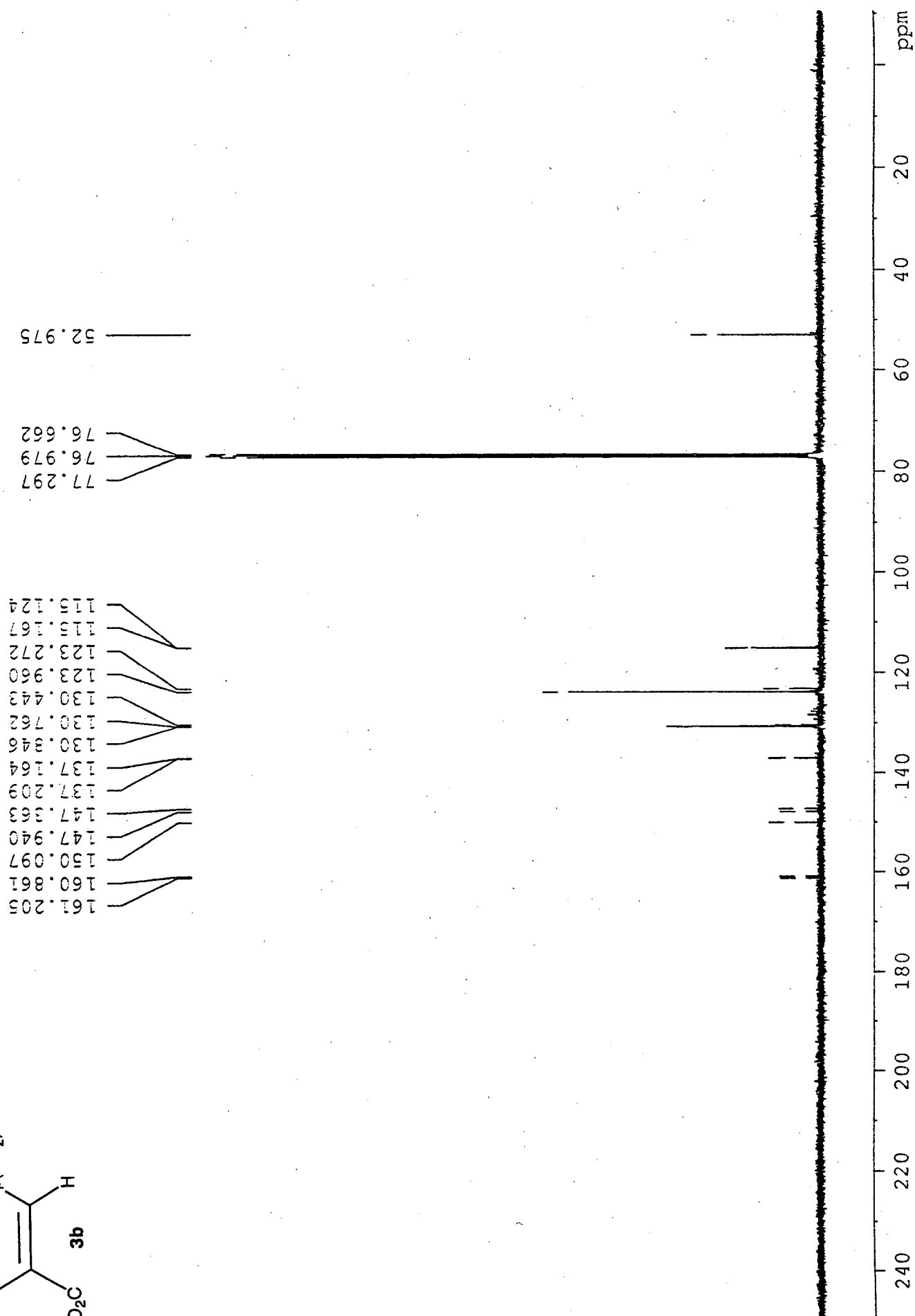
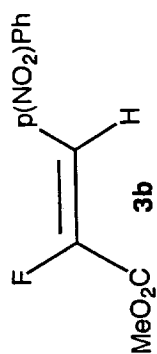
DS=40 FS=400 DA=40 FA=200 N=8 Z=2 S=0.0 Fact[ -> ] \*1

Liste Spectres > S=104 F=A Pos=1 Int=1

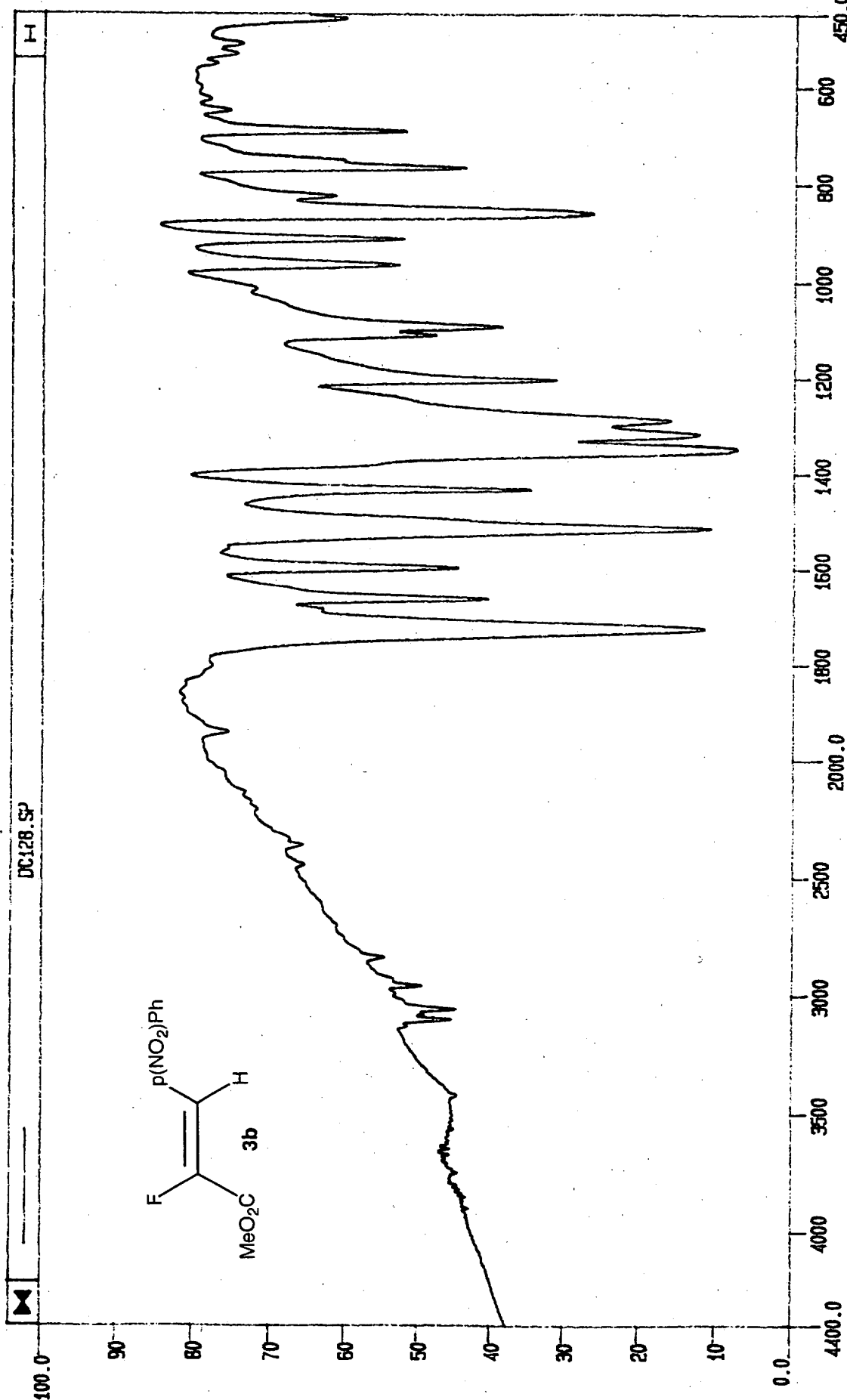
200 0.0001

Fichier: PCHEV16.SPE Date 06-03-99 Heure 10:19:59  
 S=104 MB=225 IB=0.066 RT=00:02:32

Masse	Int (%)	Masse	Int (%)	Masse	Int (%)	Masse	Int (%)
50	7.01	51	4.80	55	6.27	57	5.90
58	10.33	59	15.13	62	6.27	63	21.03
64	4.43	65	6.27	66	5.54	68	17.71
69	15.87	70	24.35	71	4.43	73	7.38
74	41.70	75	29.89	76	17.34	77	33.95
78	11.81	79	13.28	81	21.77	82	12.18
83	16.61	84	4.43	86	4.80	89	15.50
91	7.75	92	16.24	93	7.01	94	16.61
95	4.43	96	5.17	98	4.43	99	10.33
100	9.59	101	13.28	102	5.17	105	9.96
107	29.89	108	20.66	109	16.24	115	8.12
117	7.75	119	5.90	120	19.93	133	5.17
147	4.43	187	7.01	188	5.17	194	7.75
195	4.80	225	100.00	226	14.02		







CH-1

P-E 16    Filename: DC128.SP    Date: 99/02/14 Time: 13:16:59.00

Scans: 5    Resolution: 4.00    Operator:

Sample: CHEVRIE DC128 ds KBr