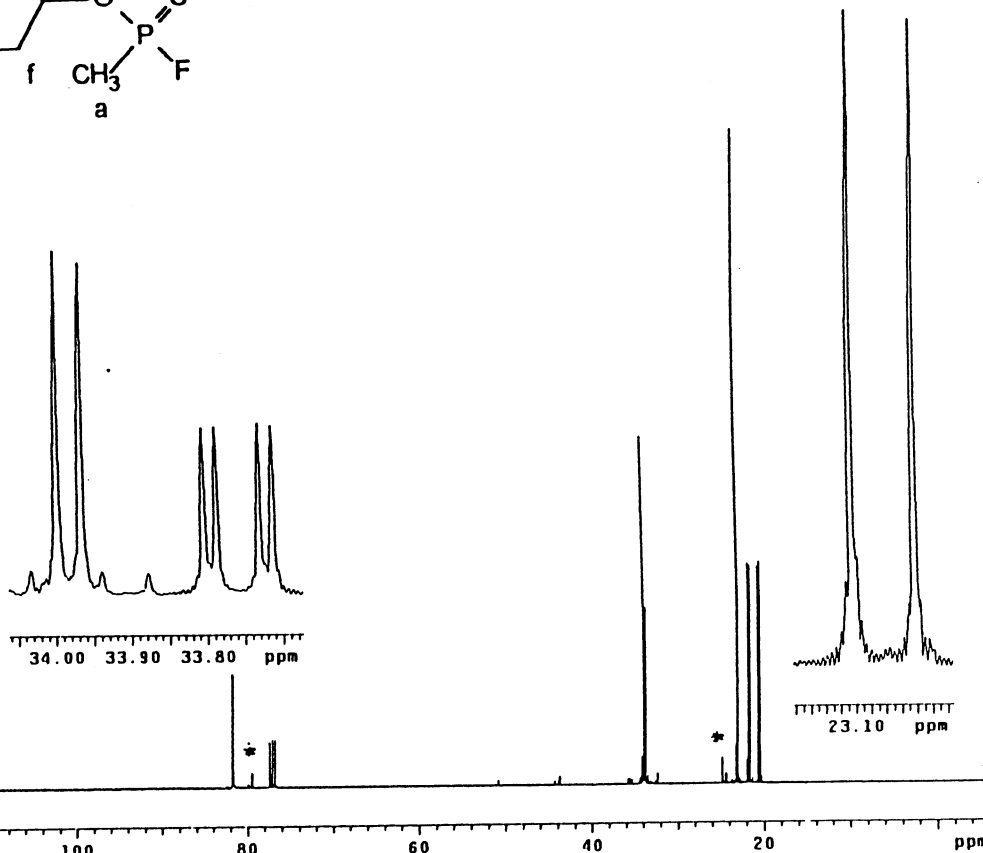
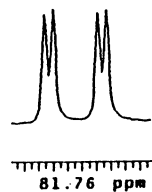
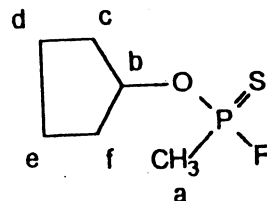


13C-NMR c1122b(1H)  
 cyclopentylthiophosphorin  
 in ca 0.7ml CDCl3  
 214195126.006 Jrn.342;146/200  
 Solvent: CDCl3  
 Temp. 30.0 C / 303.1 K  
 User: pm1  
 File: c1122b  
 VXR-400S "pmlvvr"  
 PULSE SEQUENCE  
 Relax. delay 1.000 sec  
 Pulse 60.0 degrees  
 Acq. time 1.598 sec  
 Width 20502.3 Hz  
 5000 repetitions  
 OBSERVE C13, 100.5688104 MHz  
 DECOUPLE H1, 399.9571862 MHz  
 Power 44 dB  
 continuously on  
 VAL12-18 modulated  
 DATA PROCESSING  
 Line broadening 0.2 Hz  
 FT size 262144  
 Total time 4.3 hours

SPECTRAL LINES for th-6.0  
 rfi- 8403.1 rfp- 7754.6  
 CDCl3 internal-77.1ppm

nr	Hz	ppm	intensity
1	8226.52	81.792	14.1
2	8225.27	81.780	14.8
3	8219.01	81.717	14.4
4	8217.76	81.705	14.8
5	7754.60	77.100	6.3
6	7722.69	76.783	6.2
7	3419.69	34.000	45.8
8	3416.41	33.968	44.2
9	3400.14	33.806	22.5
10	3398.42	33.789	22.6
11	3392.63	33.731	23.1
12	3390.91	33.714	22.8
13	2324.74	23.114	11.3
14	2323.96	23.106	85.9
15	2323.18	23.098	14.4
16	2322.55	23.092	6.2
17	2316.45	23.031	8.3
18	2315.67	23.024	84.7
19	2314.89	23.016	8.7
20	2196.01	21.834	28.7
21	2171.13	21.586	28.4
22	2080.25	20.683	28.4
23	2055.54	20.437	28.9



Cyclopentyl methylthiophosphonofluoridate  
 CAS 4241-35-4  
 Nucleus : <sup>13</sup>C{<sup>1</sup>H}  
 Frequency : 100.6 MHz  
 Concentration : ca. 154 mg/0.7 ml CDCl<sub>3</sub>  
 Ref. CDCl<sub>3</sub> int. 77.1 ppm. Res. : 0.6 Hz (20.4 ppm)  
 Instrument : Varian VXR 400S

Temperature : 30 °C  
 Spectral width : 20502.3 Hz  
 Data point (FID) : 64 K  
 Pulse angle : 13.0 μs (60°)  
 Number of pulses : 6000  
 Repetition time : 2.6 s  
 Line broadening : 0.2  
 Data points (spec) : 256 K

a:	21.1 ppm	J(aP) : 115.7 Hz	J(aF) : 24.7 Hz
b:	81.7 ppm	J(bP) : 7.5 Hz	J(bF) : 1.3 Hz
c:	33.8 ppm	J(cP) : 7.5 Hz	J(cf) : 1.7 Hz
d:	23.1 ppm	J(dP) : 8.3 Hz	
e:	23.1 ppm	J(eP) : 8.3 Hz	
f:	34.0 ppm	J(fP) : 3.3 Hz	