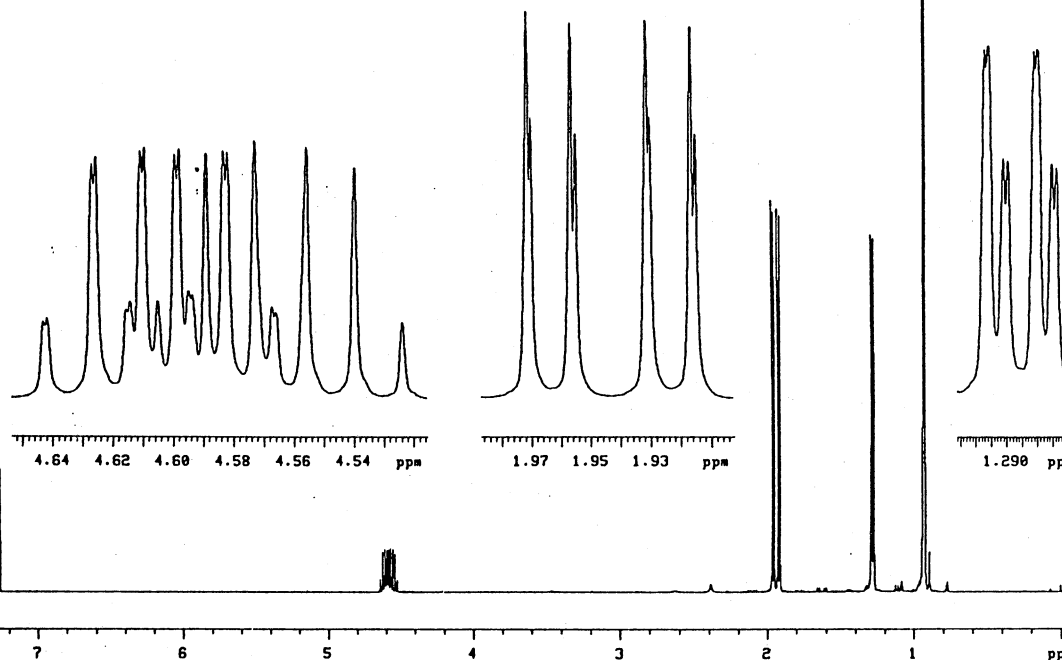
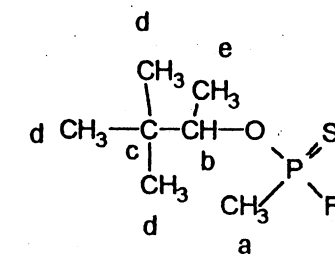


1H-NMR h115a
 ca 34mg 1,2,2-trimethylpropyl methyl-
 thiophosphonofluoridate in ca 0.7ml CDCl3
 214195126.006 jrn.342;139/200
 OBSERVE H1
 FREQUENCY 399.958 MHz
 SPECTRAL WIDTH 6499.8 Hz
 ACQUISITION TIME 5.041 sec
 RELAXATION DELAY 3.000 sec
 PULSE WIDTH 16.4 usec
 TEMPERATURE 30.0 deg. C.
 NO. REPETITIONS 64
 DOUBLE PRECISION ACQUISITION
 DATA PROCESSING
 FT SIZE 262144
 TOTAL ACQUISITION TIME 8 minutes

| SPECTRAL LINES for th=5.5 | | | | |
|---------------------------|---------|-------|-----------|--|
| TMS internal | | | | |
| nr | Hz | ppm | intensity | |
| 1 | 2906.28 | 7.266 | 15.8 | |
| 2 | 1828.99 | 4.573 | 5.6 | |
| 3 | 788.73 | 1.972 | 51.1 | |
| 4 | 788.09 | 1.970 | 36.9 | |
| 5 | 782.73 | 1.957 | 49.6 | |
| 6 | 781.99 | 1.955 | 34.8 | |
| 7 | 772.62 | 1.932 | 50.0 | |
| 8 | 772.02 | 1.930 | 37.1 | |
| 9 | 766.66 | 1.917 | 49.1 | |
| 10 | 765.92 | 1.915 | 34.8 | |
| 11 | 518.71 | 1.297 | 46.1 | |
| 12 | 518.27 | 1.296 | 46.6 | |
| 13 | 516.38 | 1.291 | 31.5 | |
| 14 | 515.74 | 1.289 | 31.3 | |
| 15 | 512.27 | 1.281 | 45.9 | |
| 16 | 511.82 | 1.280 | 46.1 | |
| 17 | 509.99 | 1.275 | 30.9 | |
| 18 | 509.34 | 1.273 | 30.4 | |
| 19 | 377.03 | 0.943 | 10.5 | |
| 20 | 375.10 | 0.938 | 273.5 | |
| 21 | 371.23 | 0.928 | 482.5 | |
| 22 | 369.00 | 0.923 | 17.1 | |



1,2,2-trimethylpropyl methylthiophosphonofluoridate
 (2 diastereomers I and II) CAS 97931-17-4
 Nucleus : ¹H
 Frequency : 400.0 MHz
 Concentration : ca. 34 mg/0.7 ml CDCl₃
 Reference TMS internal. Resolution : 0.4 Hz (TMS)
 Instrument : Varian VXR 400S

Temperature : 30 °C
 Spectral width : 6499.8 Hz
 Data point (FID) : 64 K
 Pulse angle : 16.4 μs (60°)
 Number of pulses : 64
 Repetition time : 8.0 s
 Line broadening : not used
 Data points (spec) : 256 K

| | I / II | J (Hz) | I / II | J (Hz) | I / II | J (Hz) |
|----|---------------|----------------------|---------|------------|--------|--------|
| a: | 1.94/1.94 ppm | J(be) : 6.4/6.4 Hz | J(aF) : | 6.0/6.0 Hz | | |
| b: | 4.61/4.57 ppm | J(aP) : 16.1/16.1 Hz | J(bF) : | 0.6/0.0 Hz | | |
| d: | 0.93/0.94 ppm | J(bP) : 11.0/13.4 Hz | J(eF) : | 0.5/0.6 Hz | | |
| e: | 1.29/1.28 ppm | | | | | |