

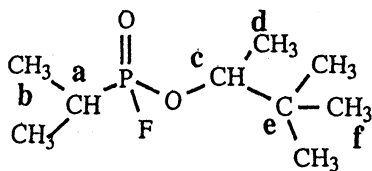
\* : impurities

**(1,2,2-TRIMETHYLPROPYL) (1-METHYLETHYL)PHOSPHONOFUORIDATE (Dias.)**

CAS number :  
 MF :  $C_9H_{20}FO_2P$   
 Solvent/Lock :  $CDCl_3/CDCl_3$   
 Nucleus :  $^{13}C$   
 Apparatus : Bruker DPX 360  
 Frequency : 90.56 MHz  
 Temperature : 23°C  
 Concentration : ≈ 40 mg/ml

Reference internal :  $CDCl_3$  at 77.26 ppm  
 Spectral width : 10100 Hz  
 Pulse Width : 7.5 μs (90°)  
 Repetition Time : 1 s  
 Data points : FID = 32K, SPC = 32K  
 Line Broadning : No  
 Peak Width 1/2 height : peak 25.45 ppm 1.1 Hz

a, a' : δ = 25.14 & 25.13 ppm ;  $J_{P-a}$  = 145.8 Hz ;  $J_{F-aa'}$  = 23.1 & 22.2 Hz  
 b : δ = 15.77 & 15.69 ppm ;  $J_{P-b}$  = 5.3 & 5.1 Hz  
 b' : δ = 15.83 ppm ;  $J_{P-b'}$  = 5.1 Hz  
 c : δ = 83.02 ppm ;  $J_{P-c}$  = 8.6 Hz  
 c' : δ = 82.62 ppm ;  $J_{P-c'}$  = 8.8 Hz ;  $J_{F-c'}$  = 0.6 Hz  
 d : δ = 17.00 ppm ;  $J_{P-d}$  = 2.3 Hz ;  $J_{F-d}$  = 2.3 Hz  
 d' : δ = 16.91 ppm ;  $J_{P-d'}$  = 0.5 Hz  
 e : δ = 35.05 ppm ;  $J_{P-e}$  = 7.1 Hz ;  $J_{F-e}$  = 1.3 Hz  
 e' : δ = 34.87 ppm ;  $J_{P-e'}$  = 5.1 Hz  
 f, f' : δ = 25.50 & 25.47 ppm



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