

UVU419

MFL-15AUG91CD  
VVM-06DEC91UD

**U400 Phosphorus 31 Standard**  
**QUAD Probe or [<sup>1</sup>H/<sup>19</sup>F] - [<sup>15</sup>N-<sup>31</sup>P]Broadband Probe**

<sup>31</sup>P Sensitivity, 10% TMPO in C<sub>6</sub>D<sub>6</sub>

Insert sample according to separate instruction sheet

jexp1 <>	join experiment 1
LC Main Menu	activate main menu display
LC Setup	activate setup menu
LC Nucleus,Solvent	select nucleus, solvent menu
LC P31	select nucleus
LC Benzene	select solvent
rts('QUAD') <>	retrieve shims
d1=30 <>	set preacquisition delay
nt =1 <>	set number of transients
at=0.8 <>	set acquisition time
lb=1.00 <>	set line broadening
gain=20 <>	set receiver gain
su <>	perform experiment set up
when set up is complete:	
dg <>	display acquisition parameters
Lock and Shim as per UVU407 and UVU409.	
ga <>	start acquisition (will wft when complete)
when acquisition is complete:	
f full <>	display full sweep width to screen
aph <>	autophase
LC HOLD, then release	move first cursor to the left of single line
RC HOLD, then release	move second cursor to the right of single line
LC Expand	expand region inside cursors
LC HOLD, then release	move first cursor to center of line
nl <>	select nearest line
rl(0) <>	set reference (in hertz)
LC Full	display full spectrum
axis='h' <>	set axis to hertz

dscale <>	display scale in hertz
LC HOLD, then release	move first cursor to 1500ppm
RC HOLD, then release	move second cursor to -500ppm
LC Expand	expand region inside cursors
CC HOLD, then release	adjust vertical scale
cdc <>	correct drift correction (if necessary)
LC HOLD, then release	move first cursor to 1000ppm
RC HOLD, then release	move second cursor to 600ppm
dsn <>	display signal-to-noise
dsn:r1 <>	store signal-to-noise value in register one

Note that the proton decoupler was turned on and that the line appeared as a sharp singlet.

dm='nnn' <>	turn decoupler off
dmm='c' <>	set decoupler to continuous wave mode
lb='n' <>	set line broadening to "not used"
su <>	perform experiment set up

when set up is complete:

ga <>	start acquisition (will wft when complete)
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when acquisition is complete:

aph <>	autophase
dscale <>	display scale in hertz
LC HOLD, then release	move first cursor to 1000ppm
RC HOLD, then release	move second cursor to 600ppm
dsn <>	display signal-to-noise
dsn:r2 <>	store signal-to-noise value in register two
text('your name, advisor's initials') <>	enter appropriate text
pl pscale pap page<>	plot spectrum
printon dg dg1 dgs printoff <>	print parameter groups
svf('SNP31.fid') <>	save fid in appropriate directory

*Note that the signal-to-noise value, dsn, for the proton decoupled spectrum is stored in r1, and the signal-to-noise value for the coupled spectrum is stored in register 2 of the dgs data group.*

It is almost always necessary to reference a phosphorus sample to an external reference. Please read the handout on External Referencing on the U400.