

Supplementary Materials

Tetraalkyl Hydroxymethylene-bisphosphonate and Dialkyl 1-Diphenylphosphinoyl-1-hydroxy-ethylphosphonate Derivatives by the Pudovik Reaction and Their Rearranged Products

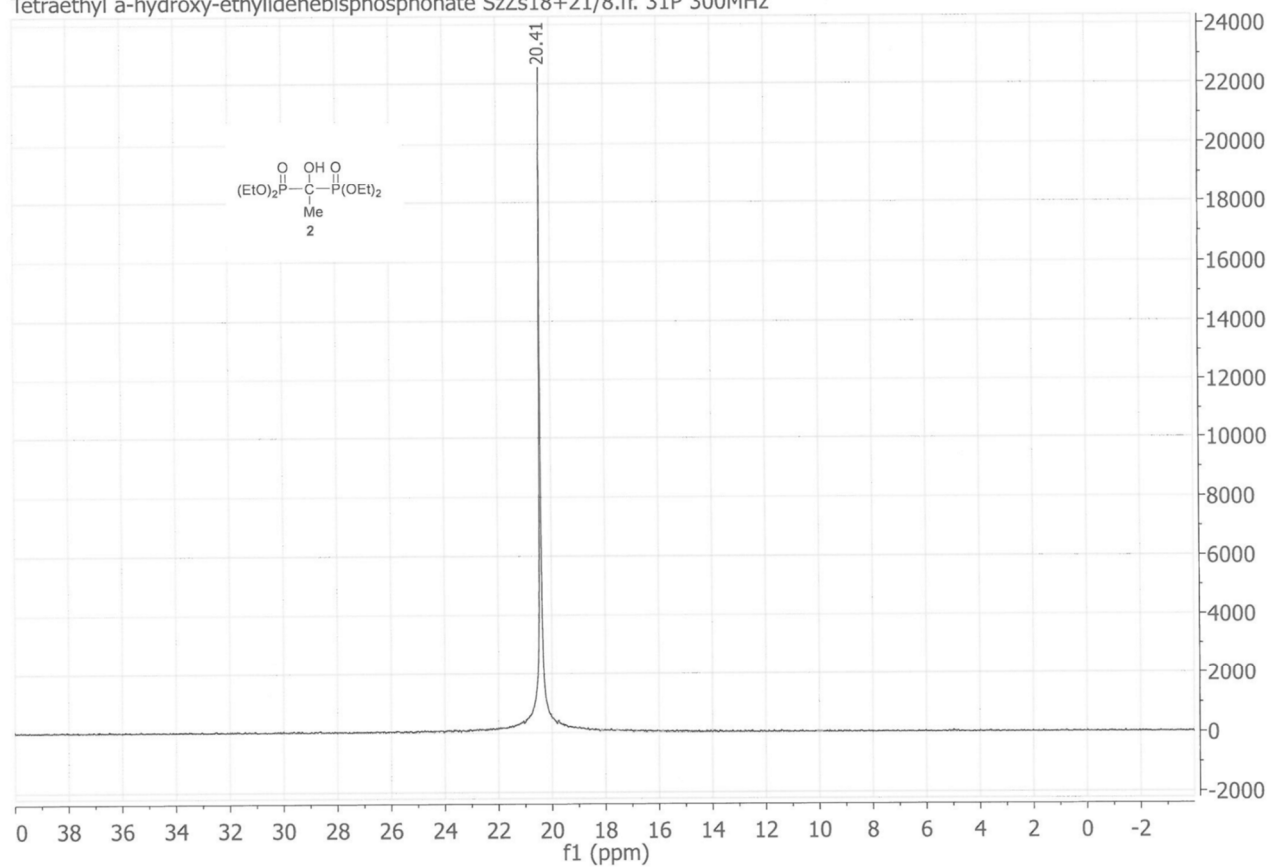
Zsuzsanna Szalai and György Keglevich *

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Technology and Economics, 1521 Budapest, Hungary

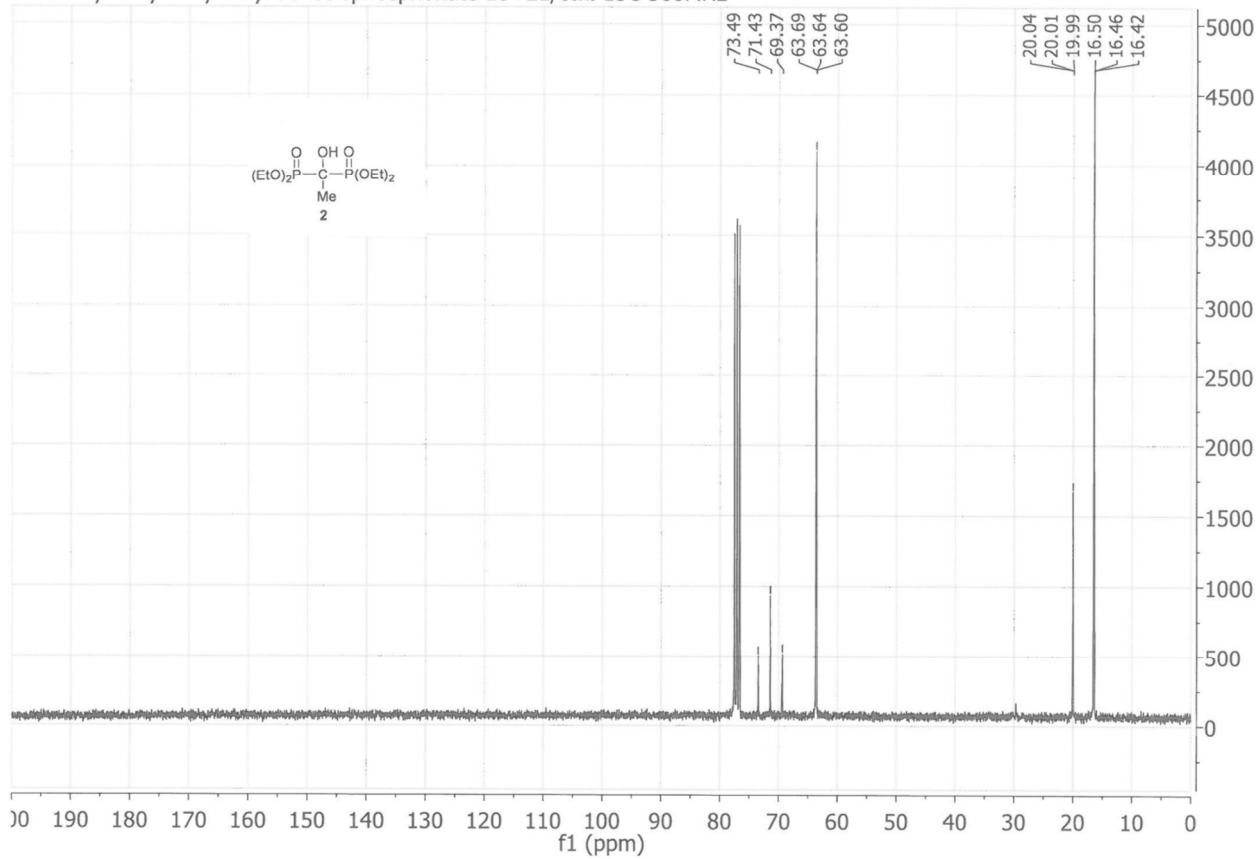
^{31}P , ^{13}C and ^1H NMR spectra of products

2, 3, 4, 5-1 + 5-2, 8, 10-1 + 10-2, 11 and 13-1 + 13-2

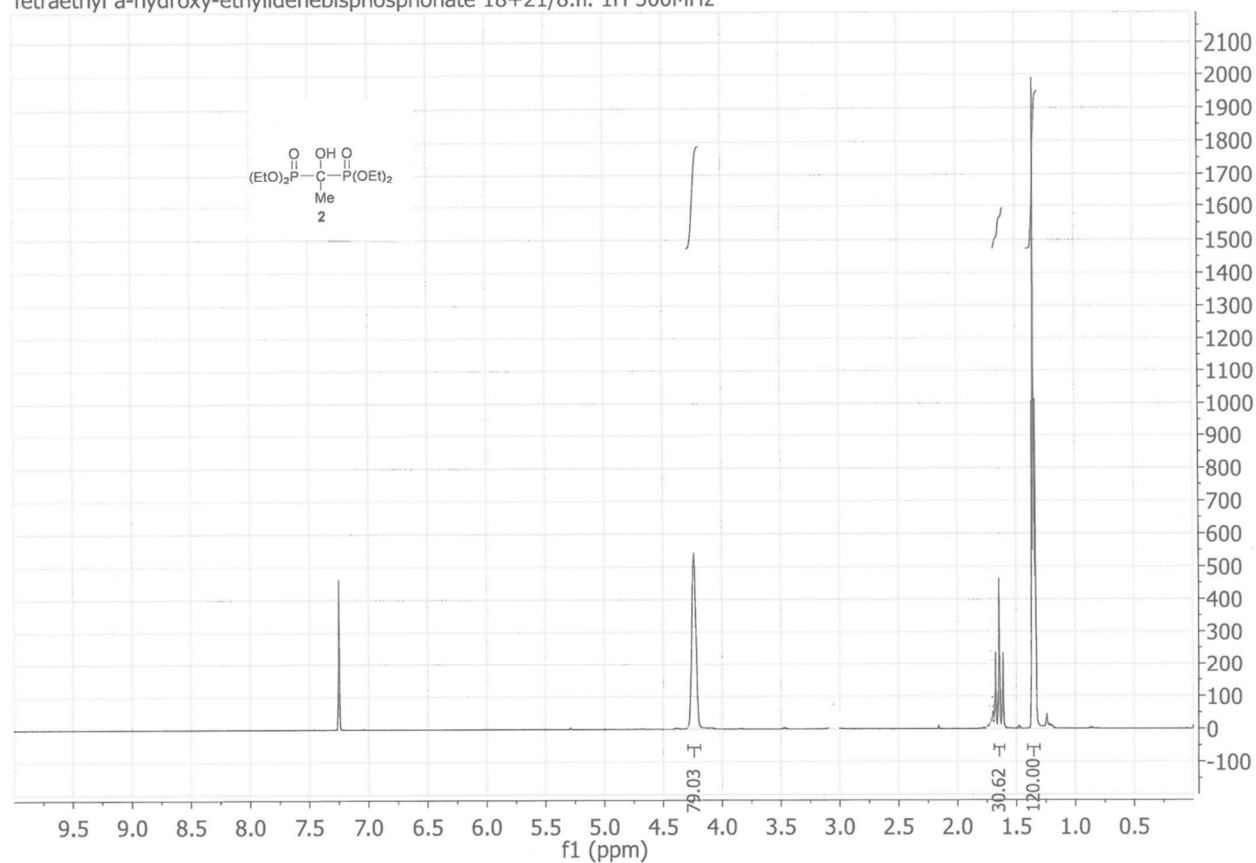
Tetraethyl a-hydroxy-ethylidenebisphosphonate SzZs18+21/8.fr. 31P 300MHz



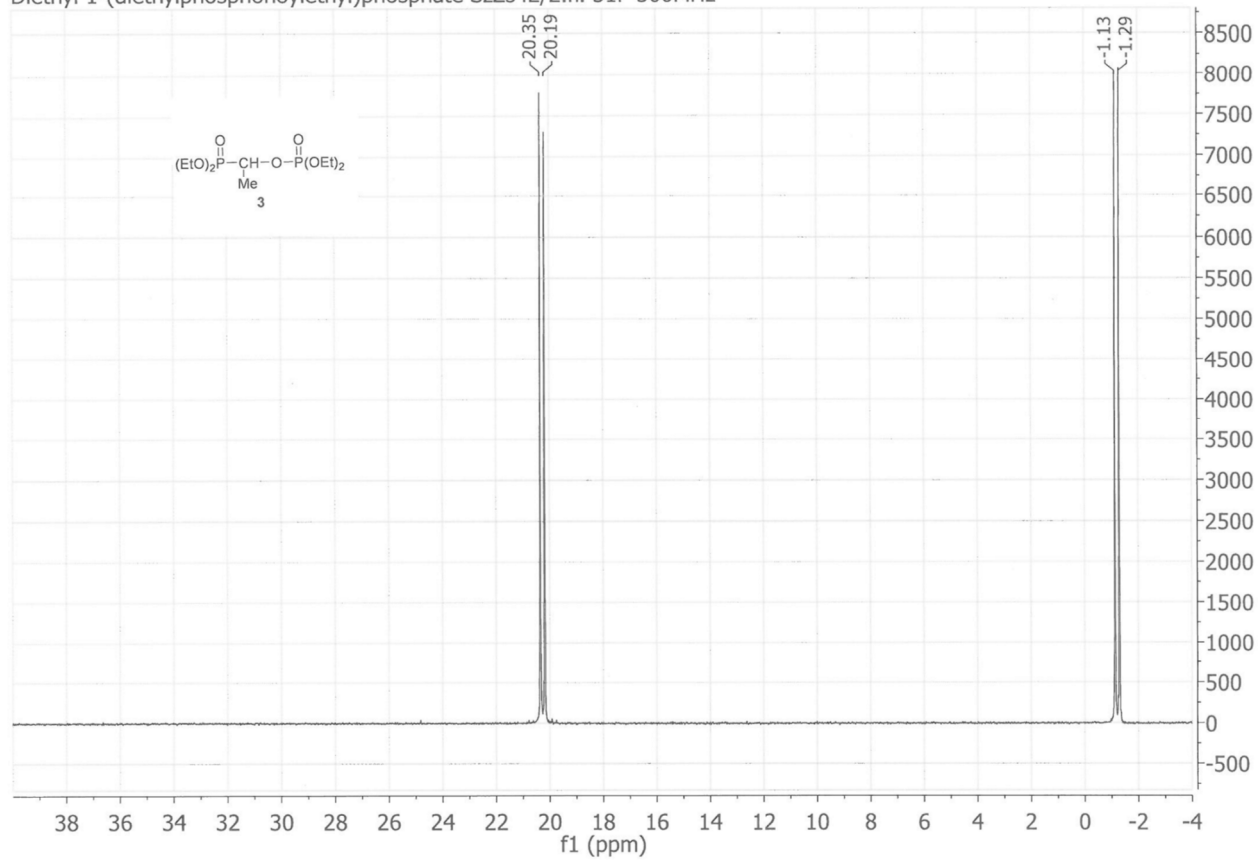
Tetraethyl a-hydroxy-ethylidenebisphosphonate 18+21/8.fr. 13C 300MHz



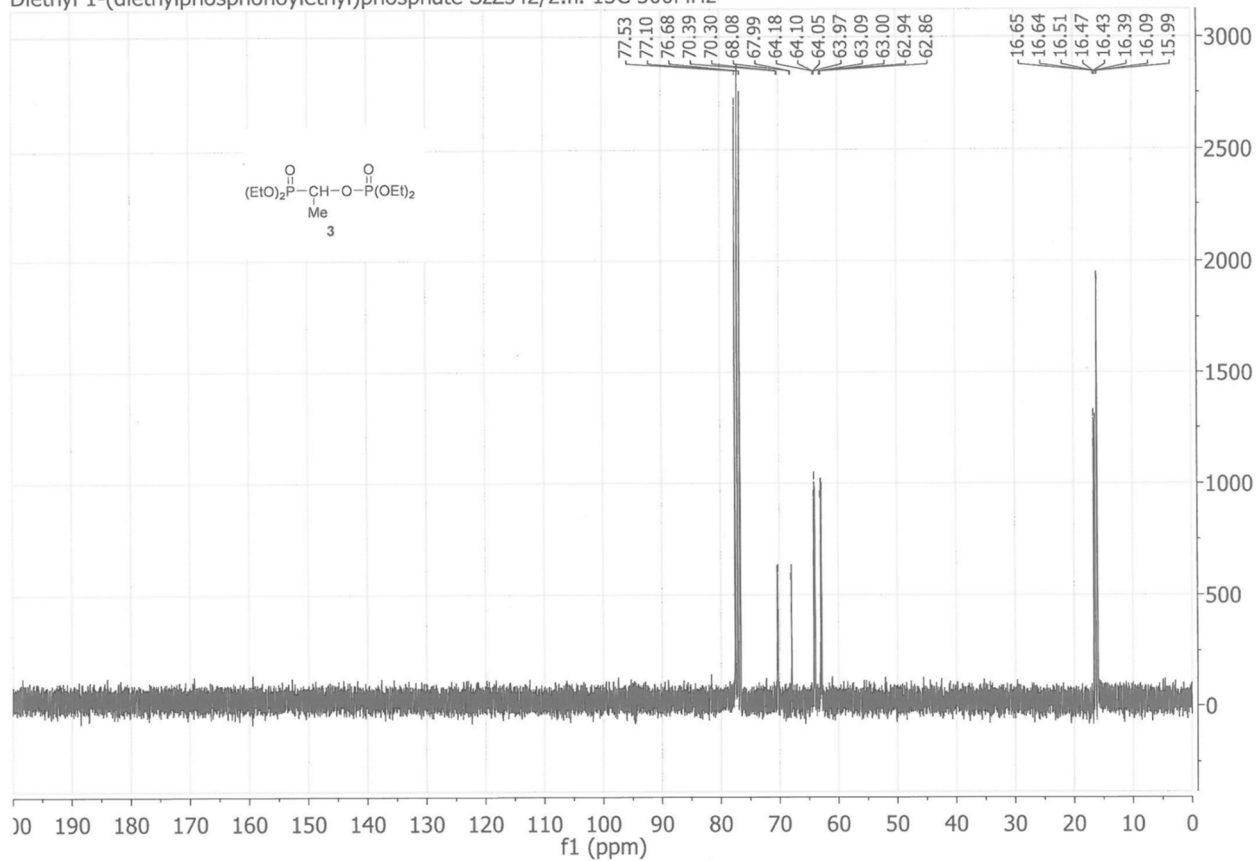
Tetraethyl a-hydroxy-ethylidenebisphosphonate 18+21/8.fr. ^1H 500MHz



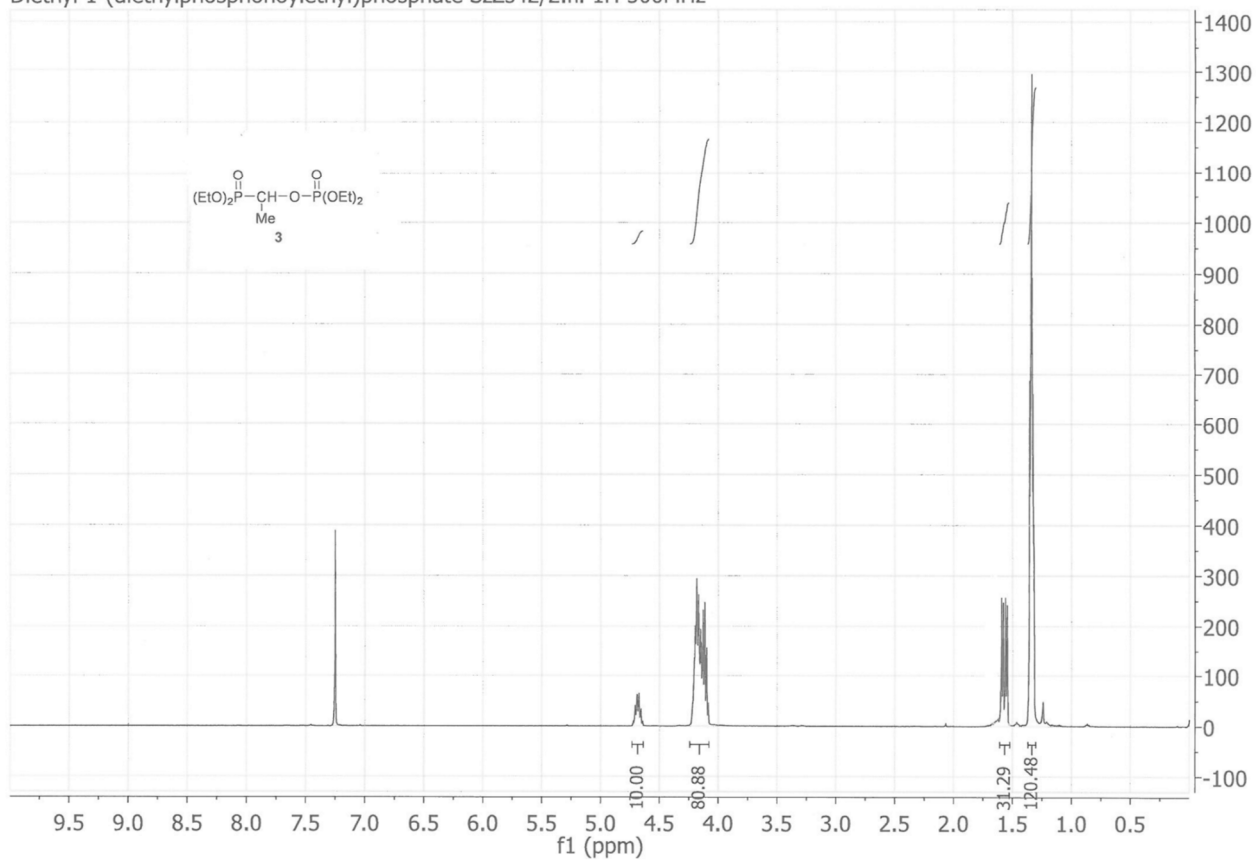
Diethyl 1-(diethylphosphonoylethyl)phosphate SzZs42/2.fr. ^{31}P 500MHz



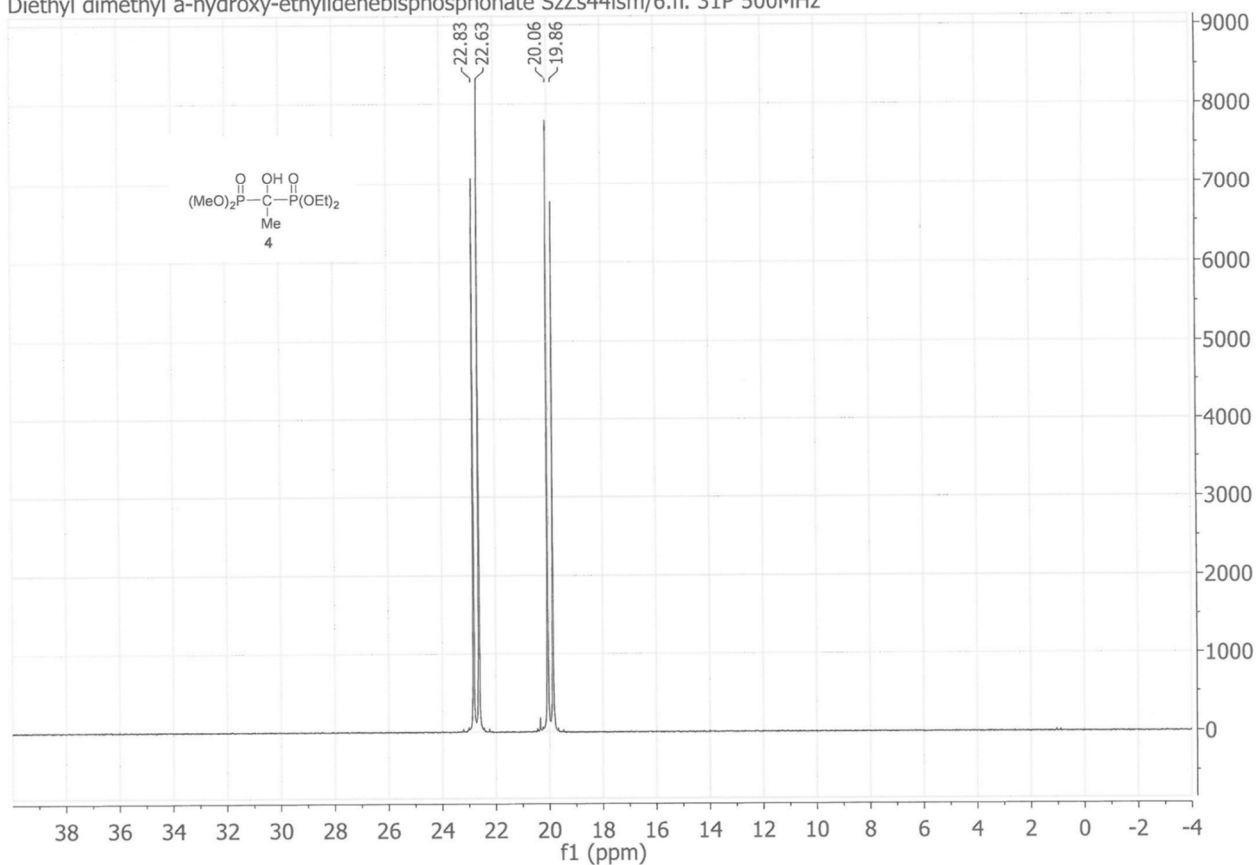
Diethyl 1-(diethylphosphonoylethyl)phosphate SzZs42/2.fr. 13C 300MHz



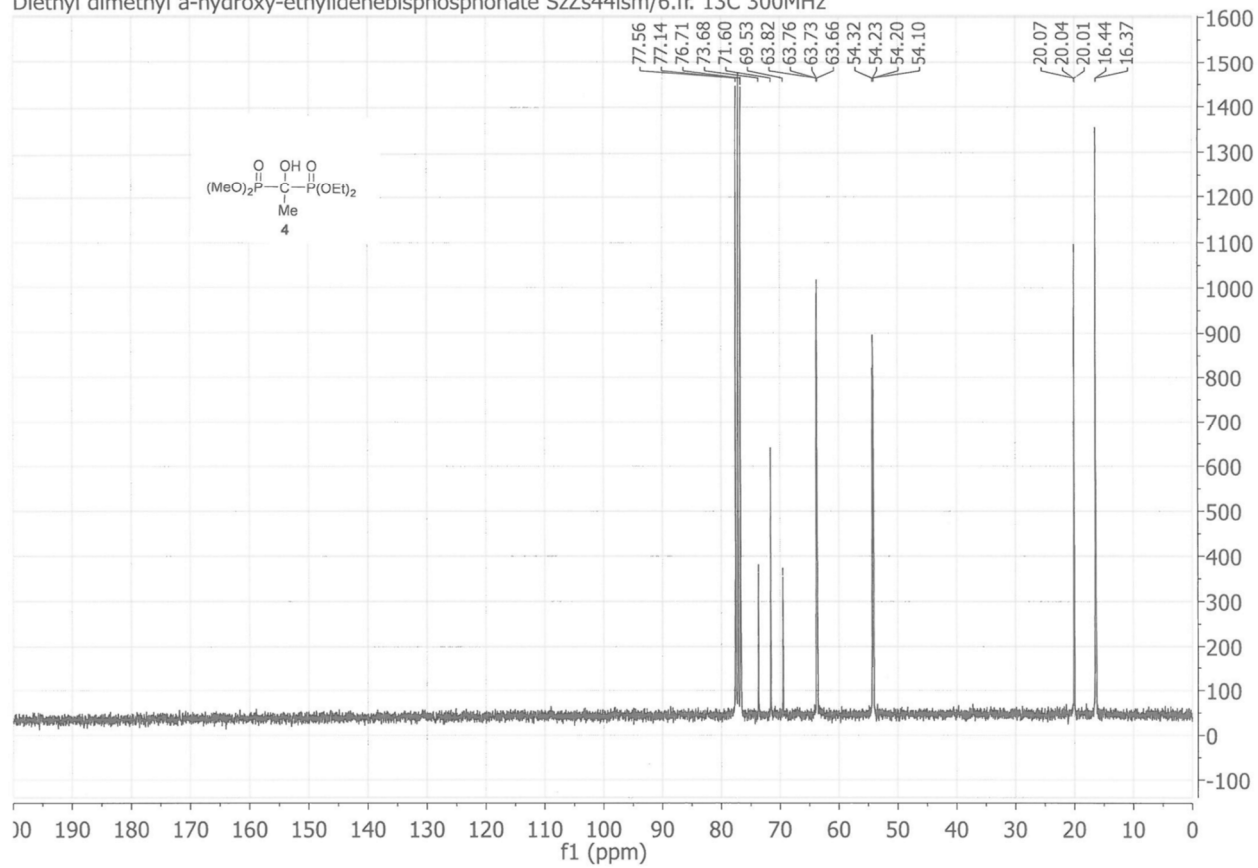
Diethyl 1-(diethylphosphonoylethyl)phosphate SzZs42/2.fr. 1H 500MHz



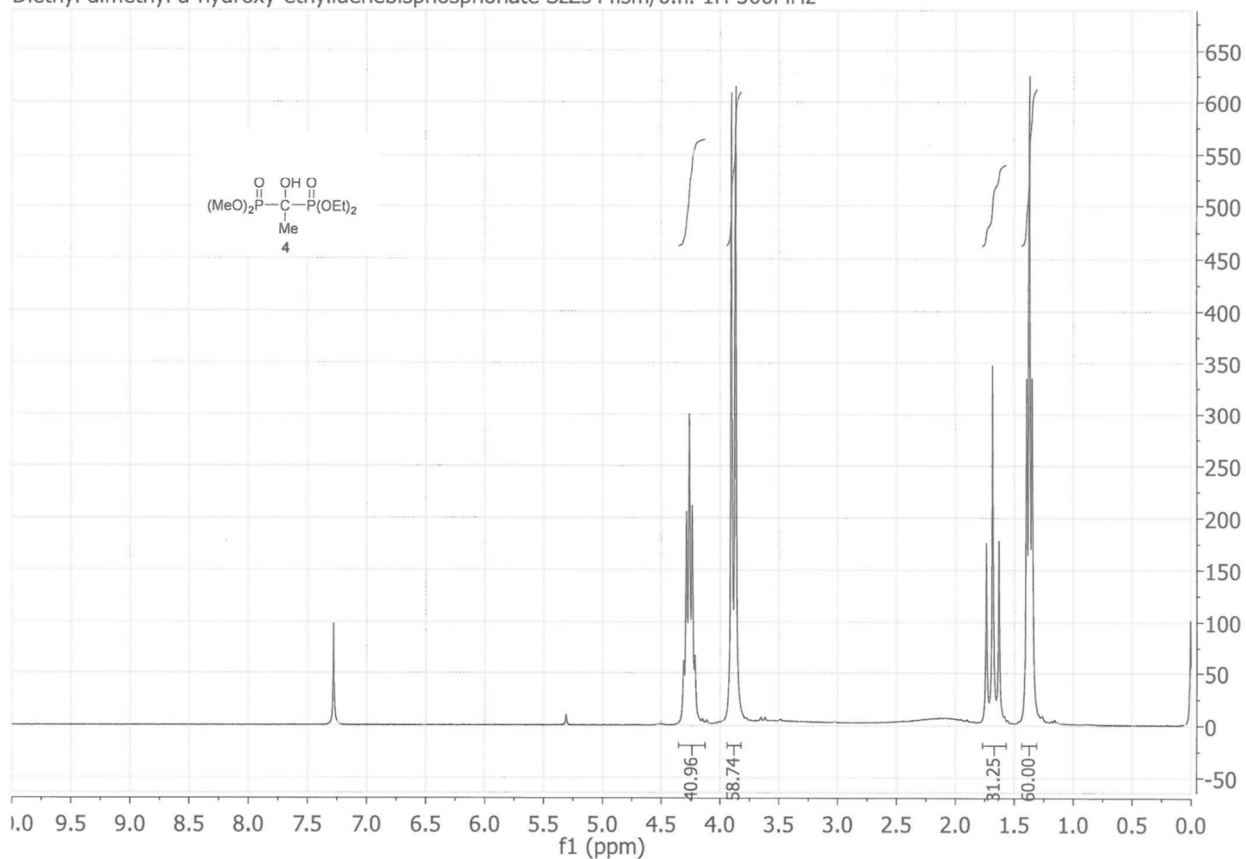
Diethyl dimethyl a-hydroxy-ethylidenebisphosphonate SzZs44ism/6.fr. 31P 500MHz



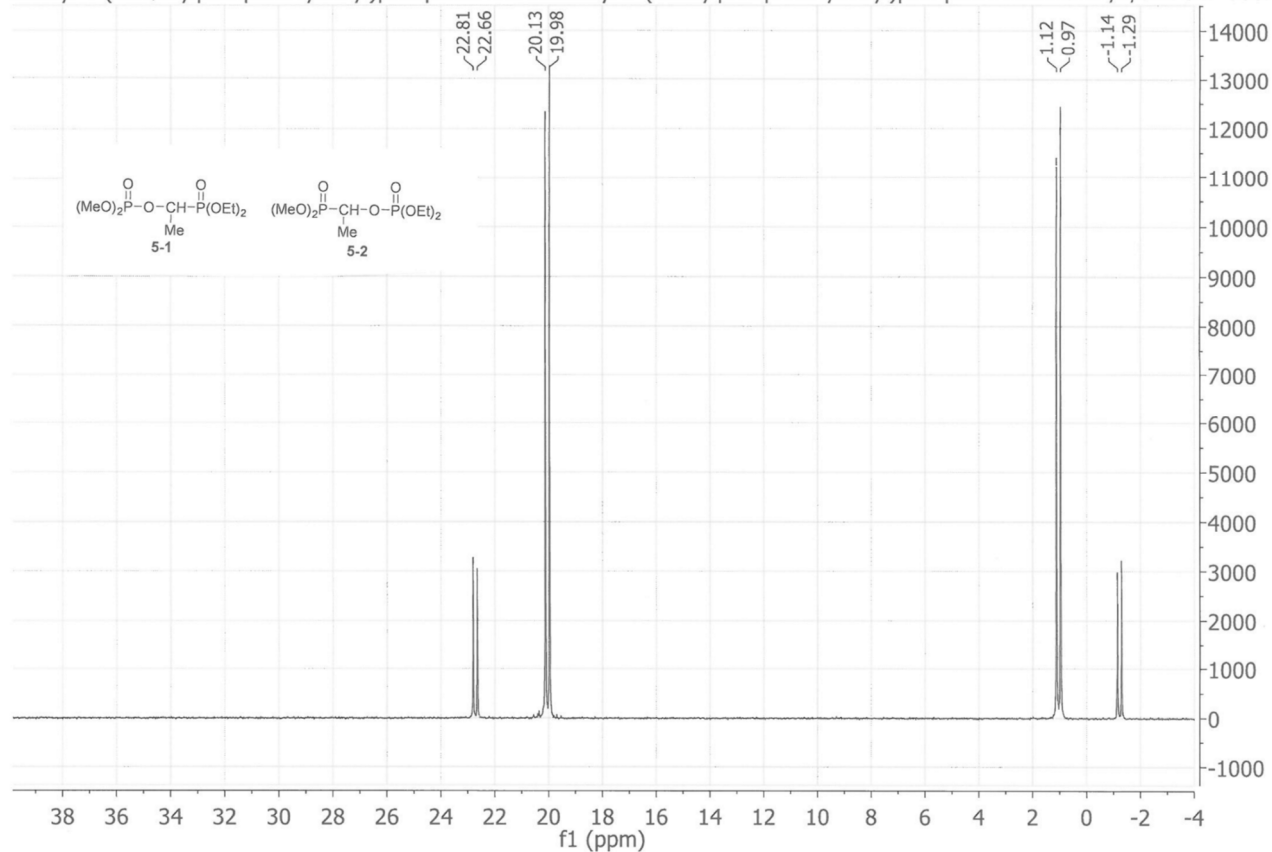
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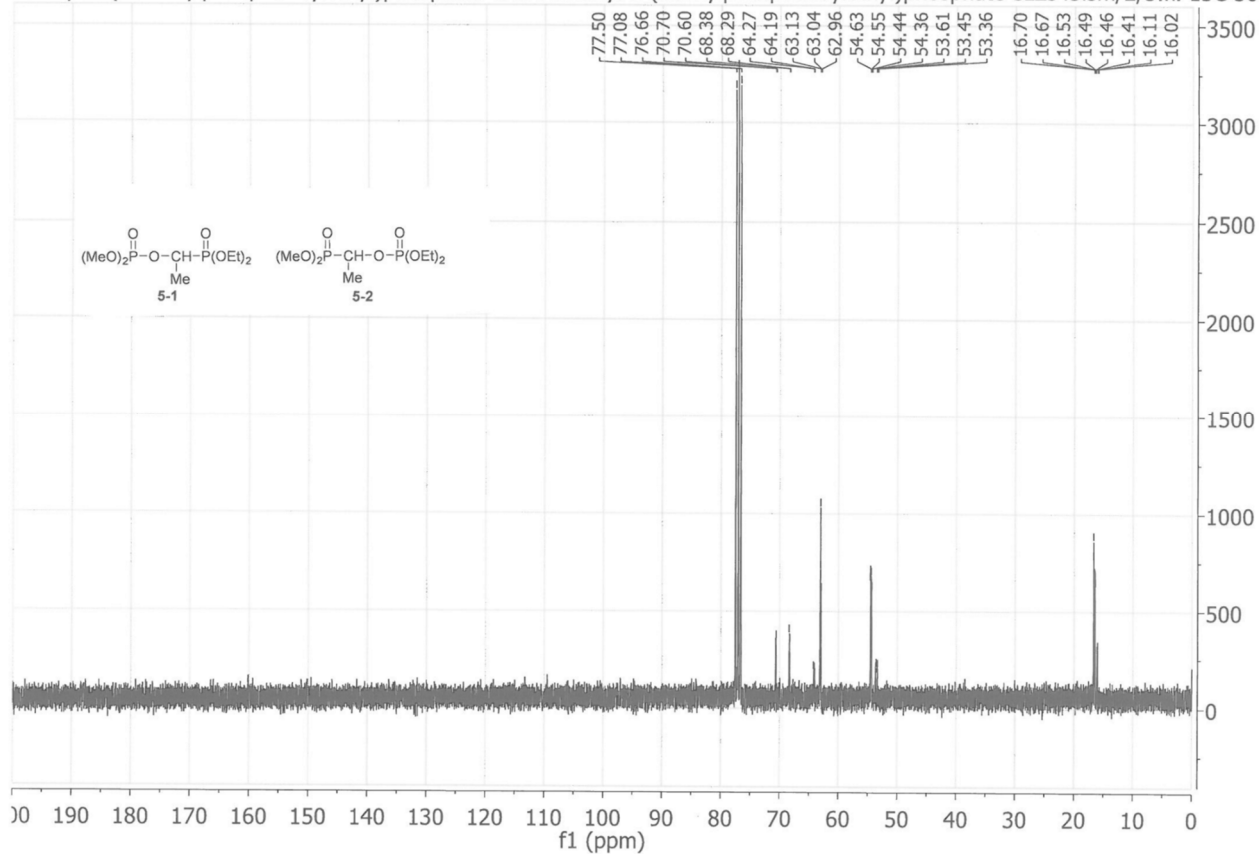
Diethyl dimethyl a-hydroxy-ethylidenebisphosphonate SzZs44ism/6.fr. 1H 300MHz



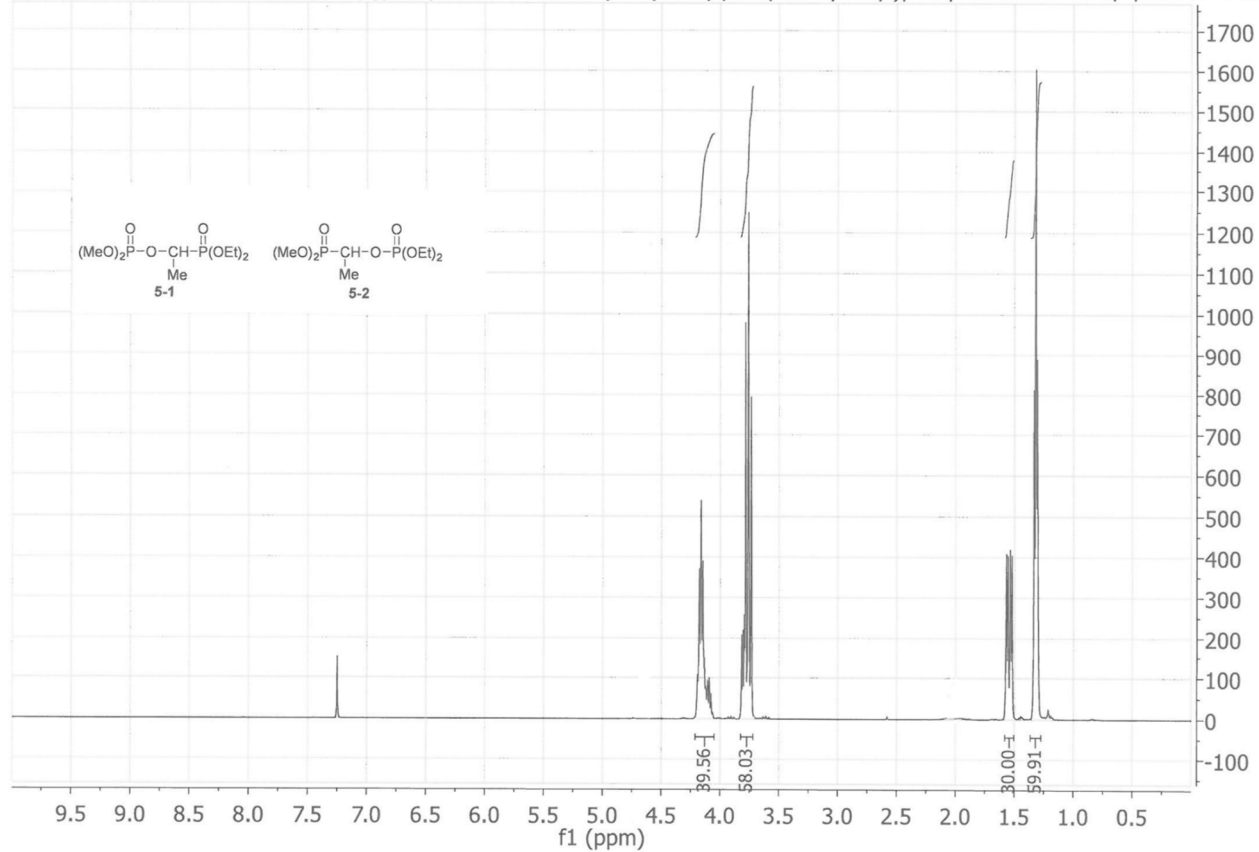
Diethyl 1-(dimethylphosphonoylethyl)phosphate and Dimethyl 1-(diethylphosphonoylethyl)phosphate SzZs43ism/2/3.fr. 31P 500V



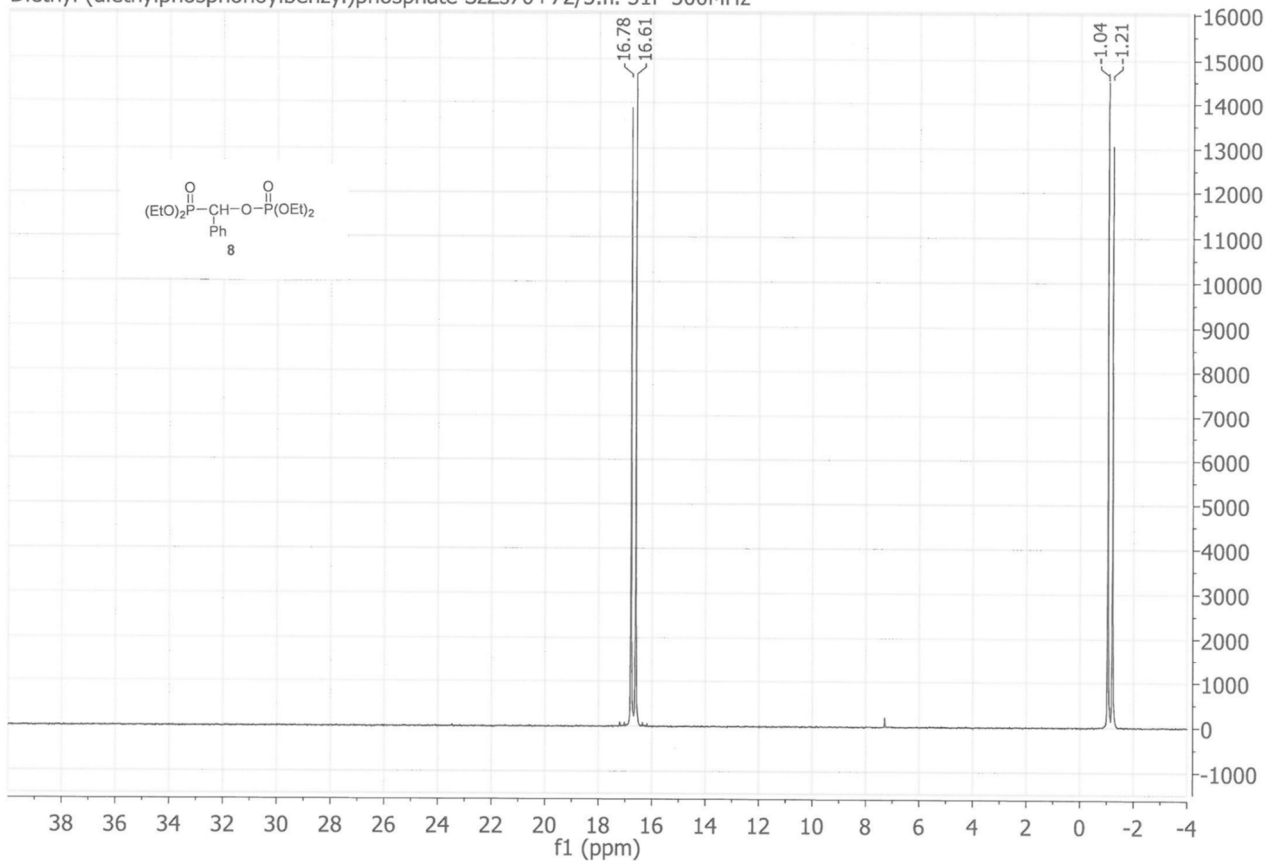
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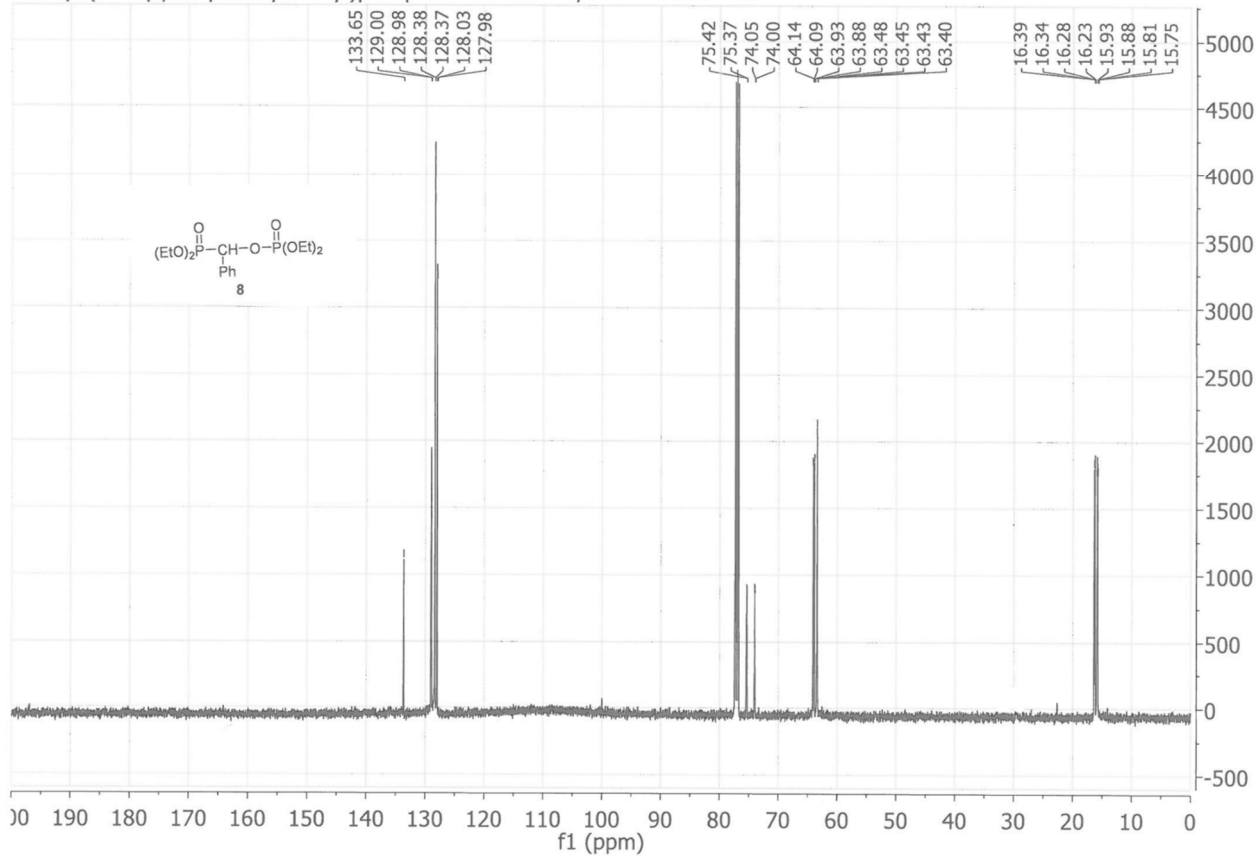
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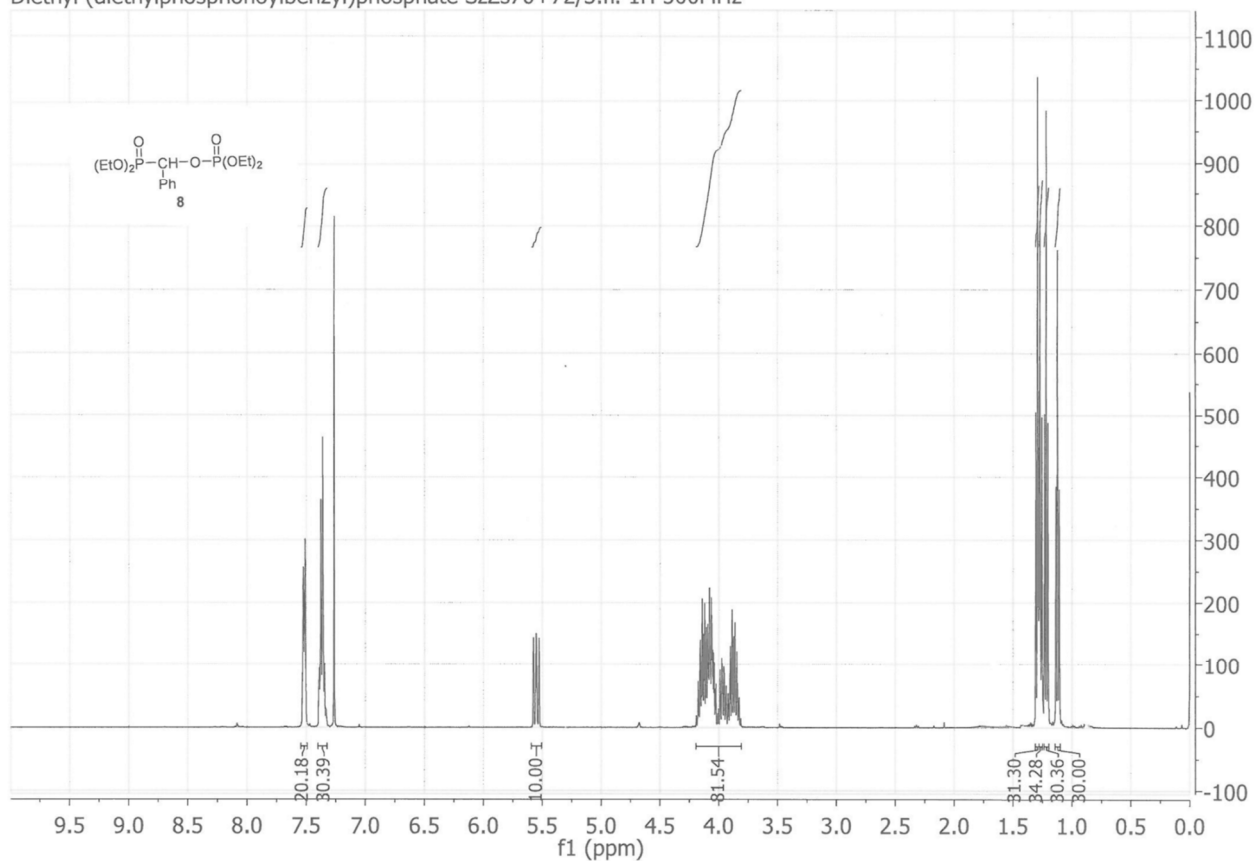
Diethyl (diethylphosphonoylbenzyl)phosphate SzZs70+72/3.fr. 31P 500MHz



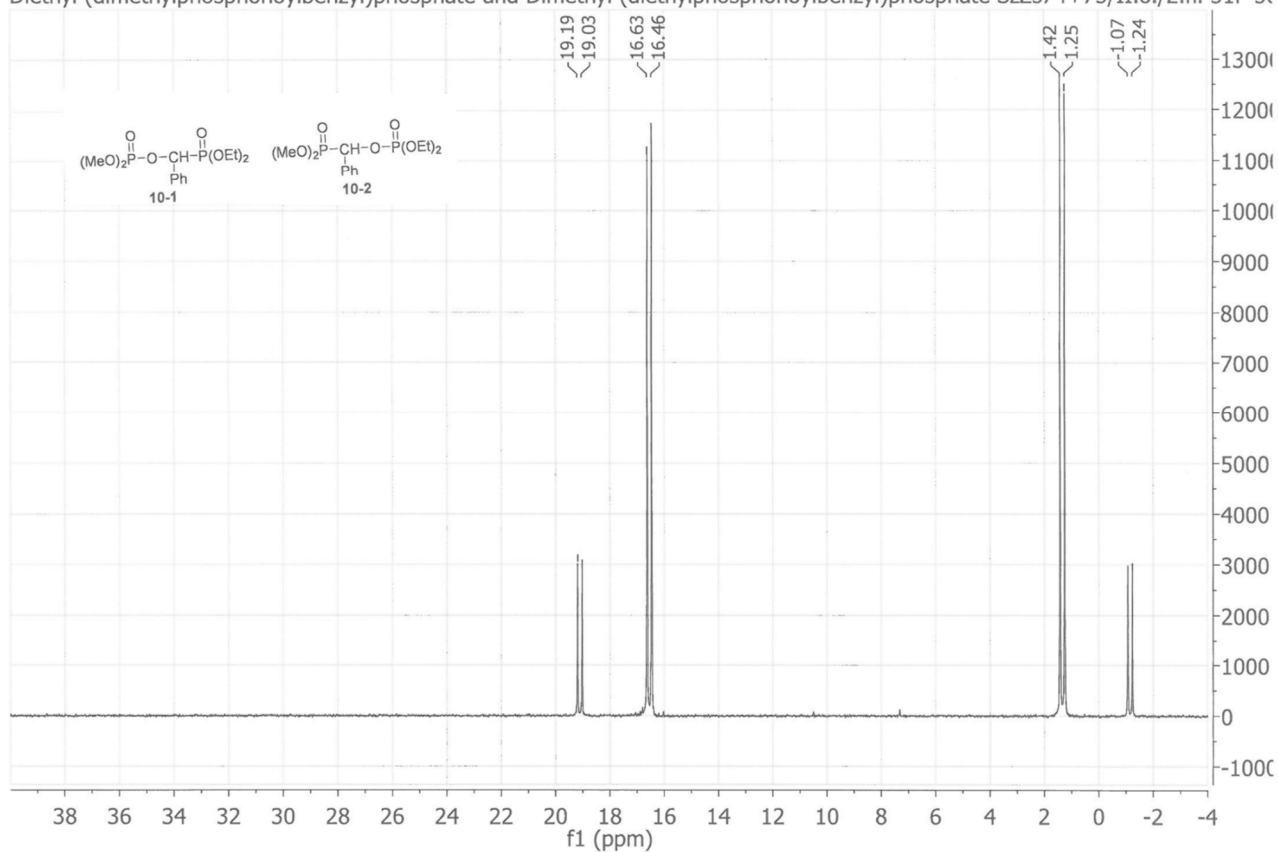
Diethyl (diethylphosphonoylbenzyl)phosphate SzZs70+72/2.fr. 13C 500MHz



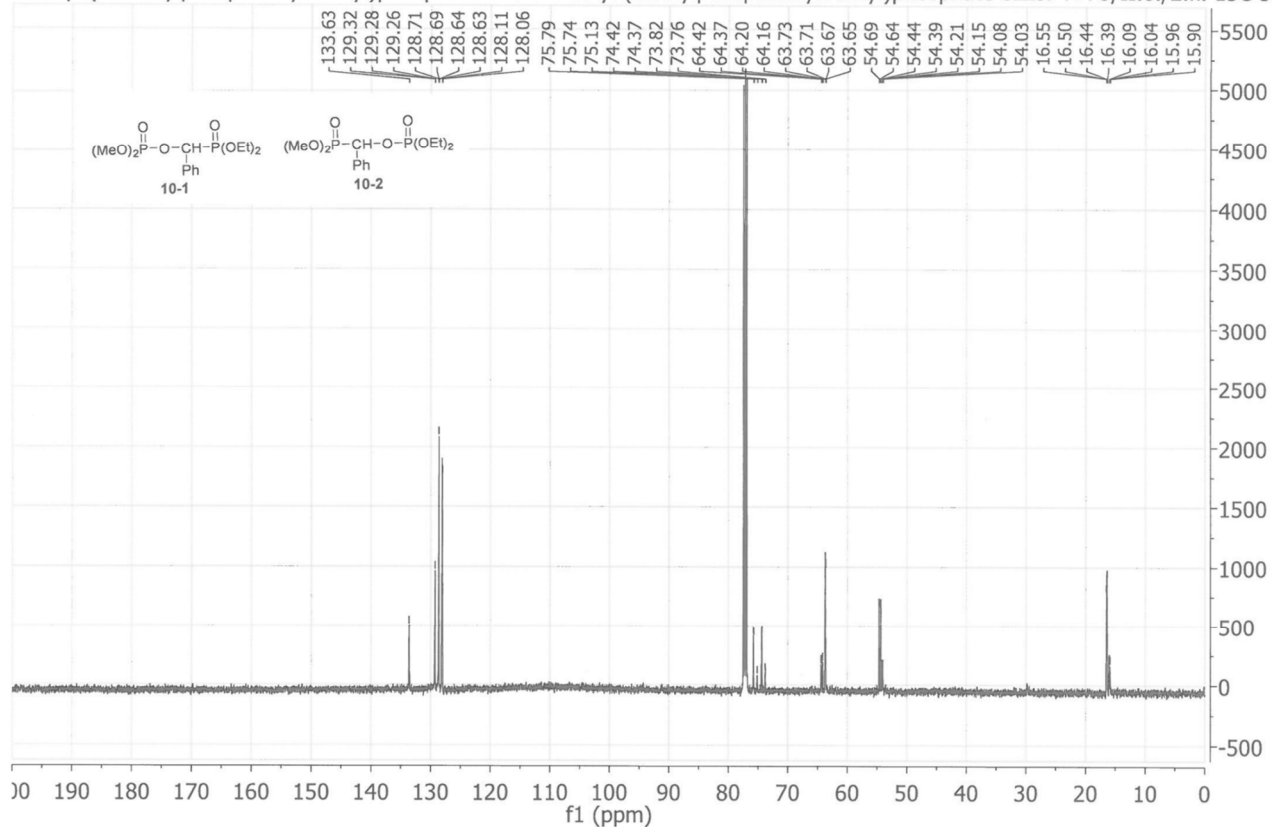
Diethyl (diethylphosphonoylbenzyl)phosphate SzZs70+72/3.fr. 1H 500MHz



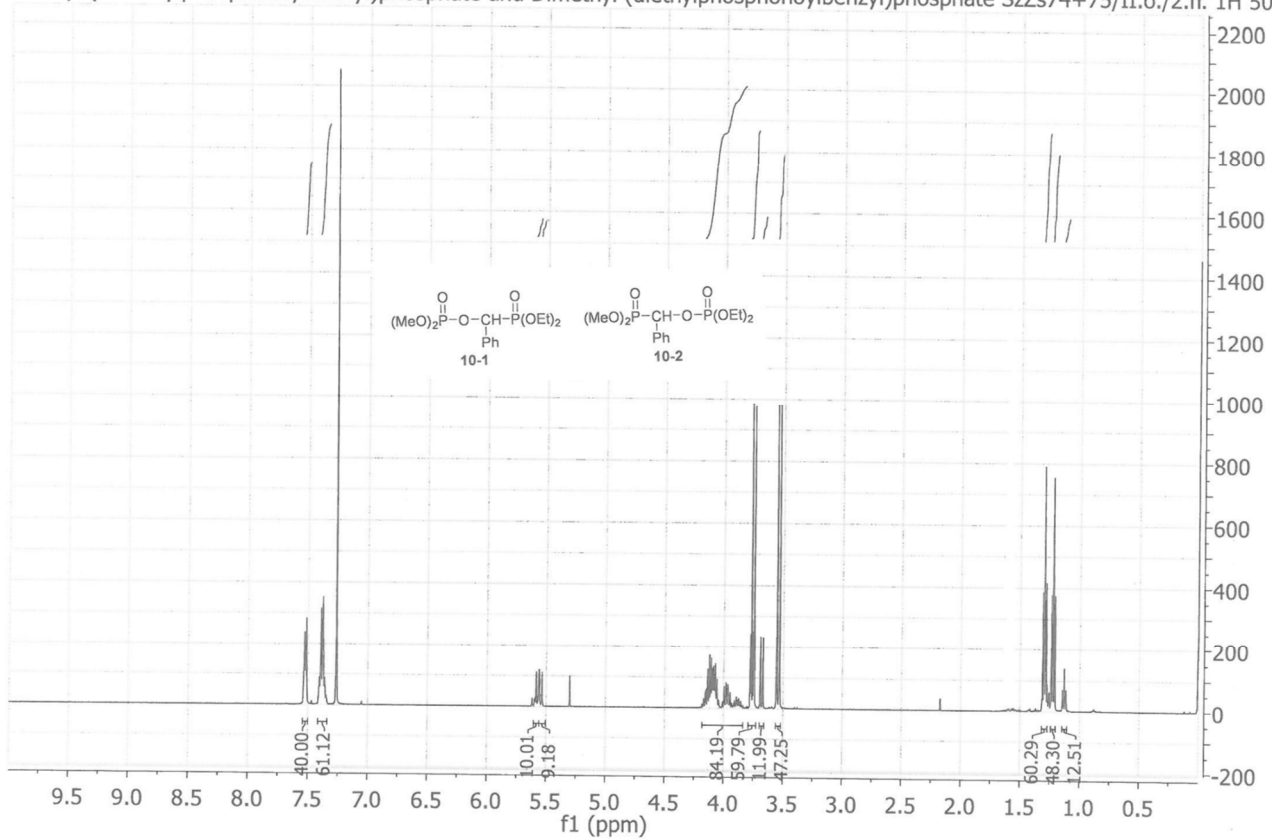
Diethyl (dimethylphosphonoylbenzyl)phosphate and Dimethyl (diethylphosphonoylbenzyl)phosphate SzZs74+75/II.o./2.fr. 31P 500MHz



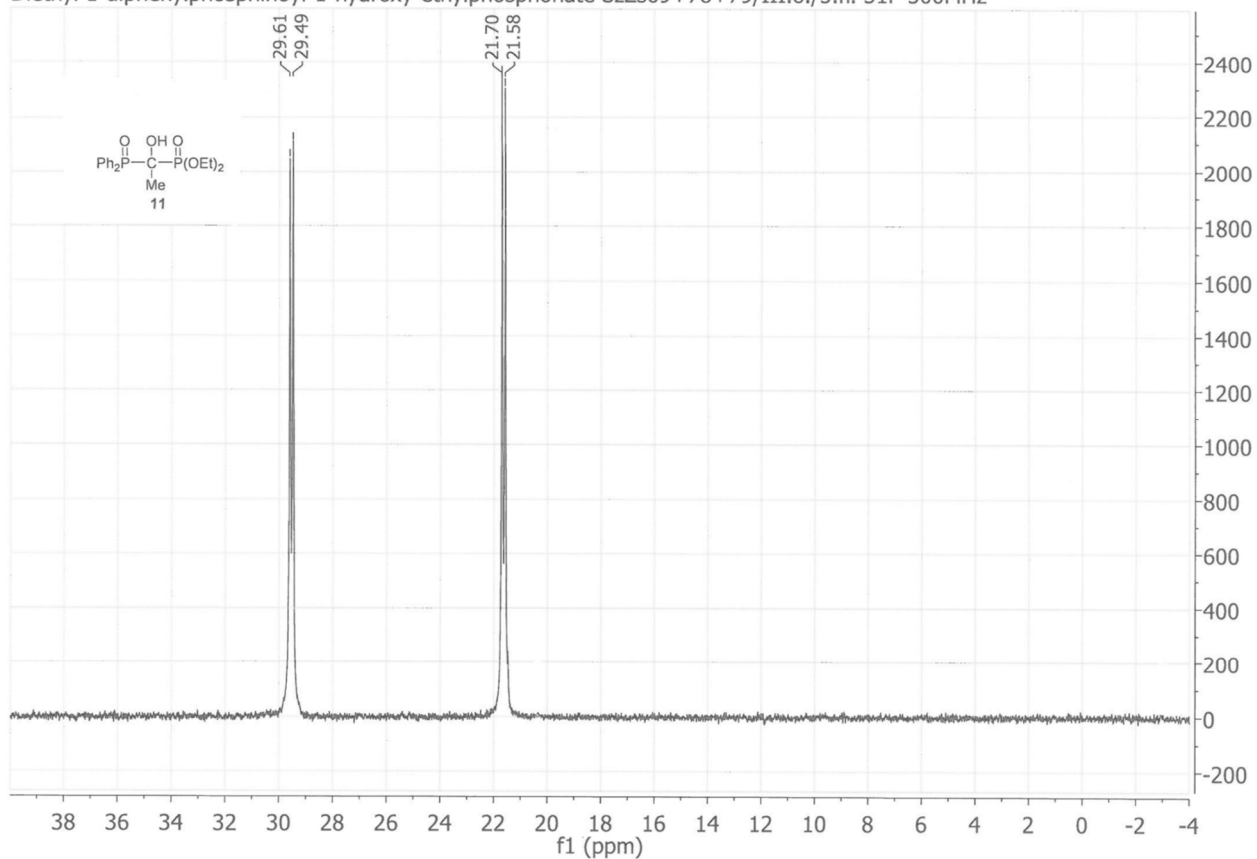
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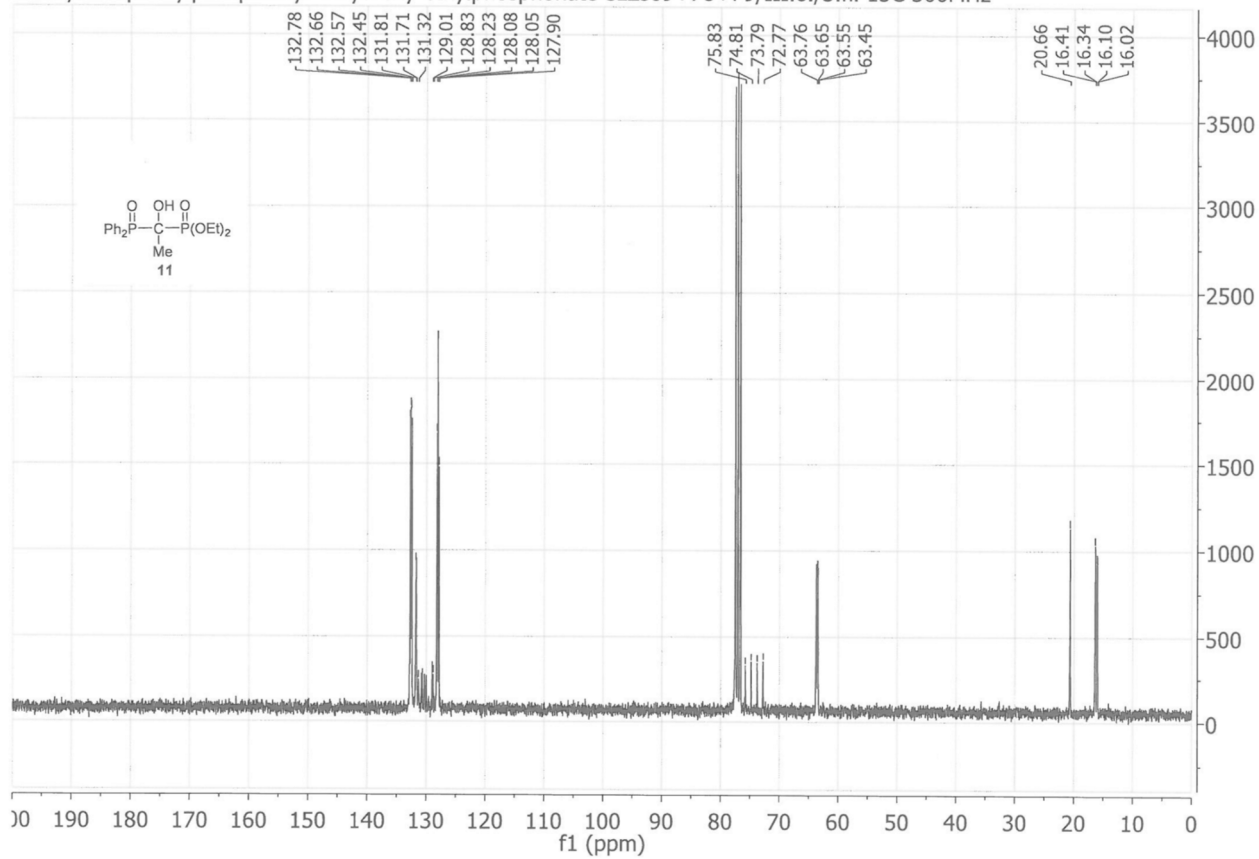
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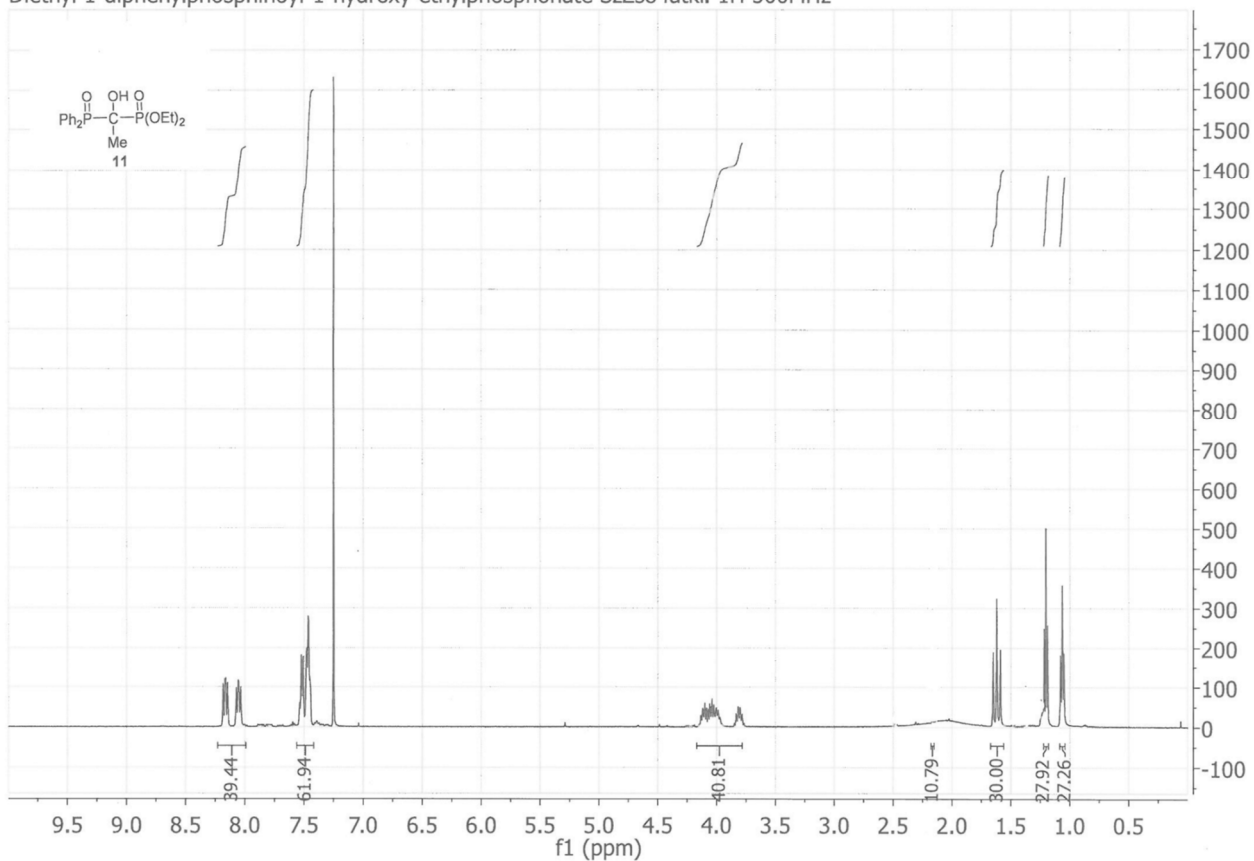
Diethyl 1-diphenylphosphinoyl-1-hydroxy-ethylphosphonate SzZs69+78+79/III.o./5.fr. 31P 500MHz



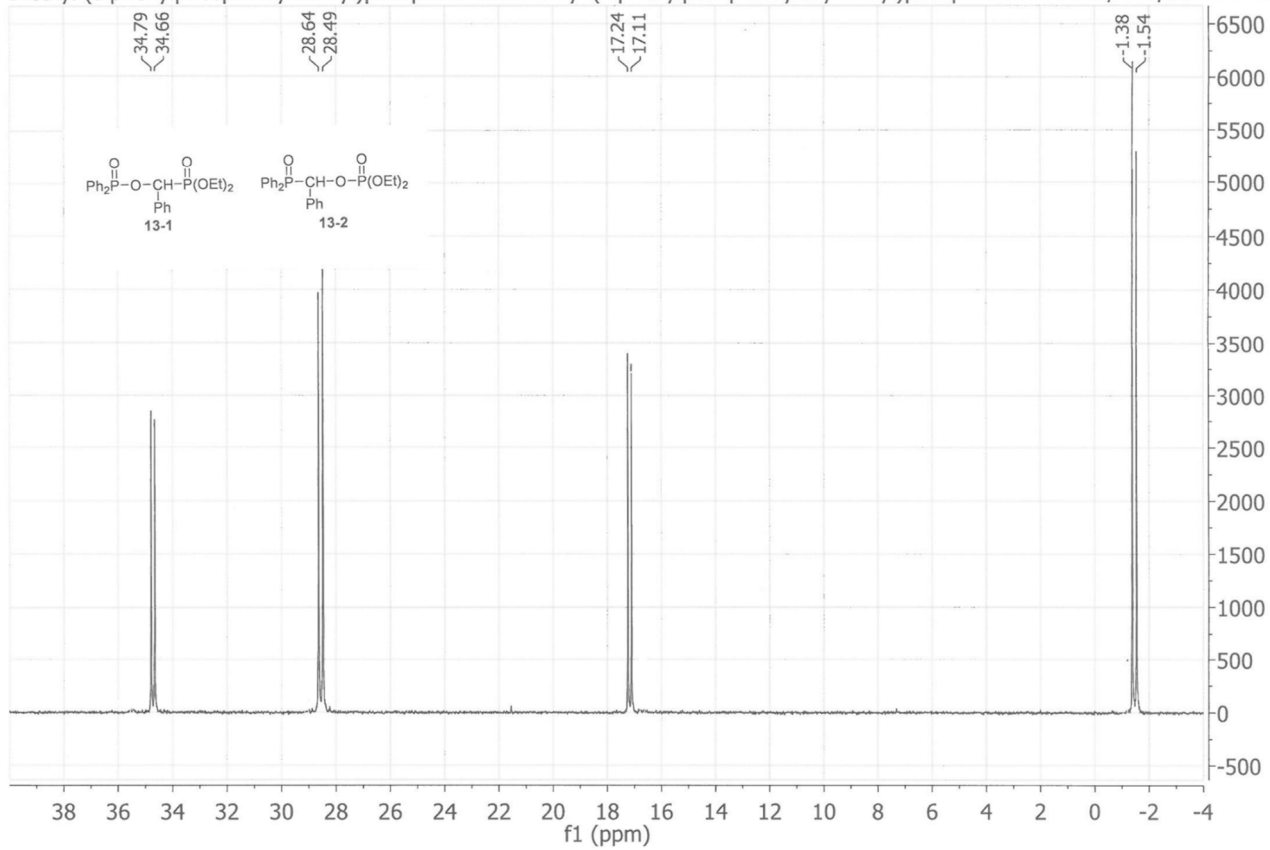
Diethyl 1-diphenylphosphinoyl-1-hydroxy-ethylphosphonate SzZs69+78+79/III.o./3.fr. 13C 300MHz



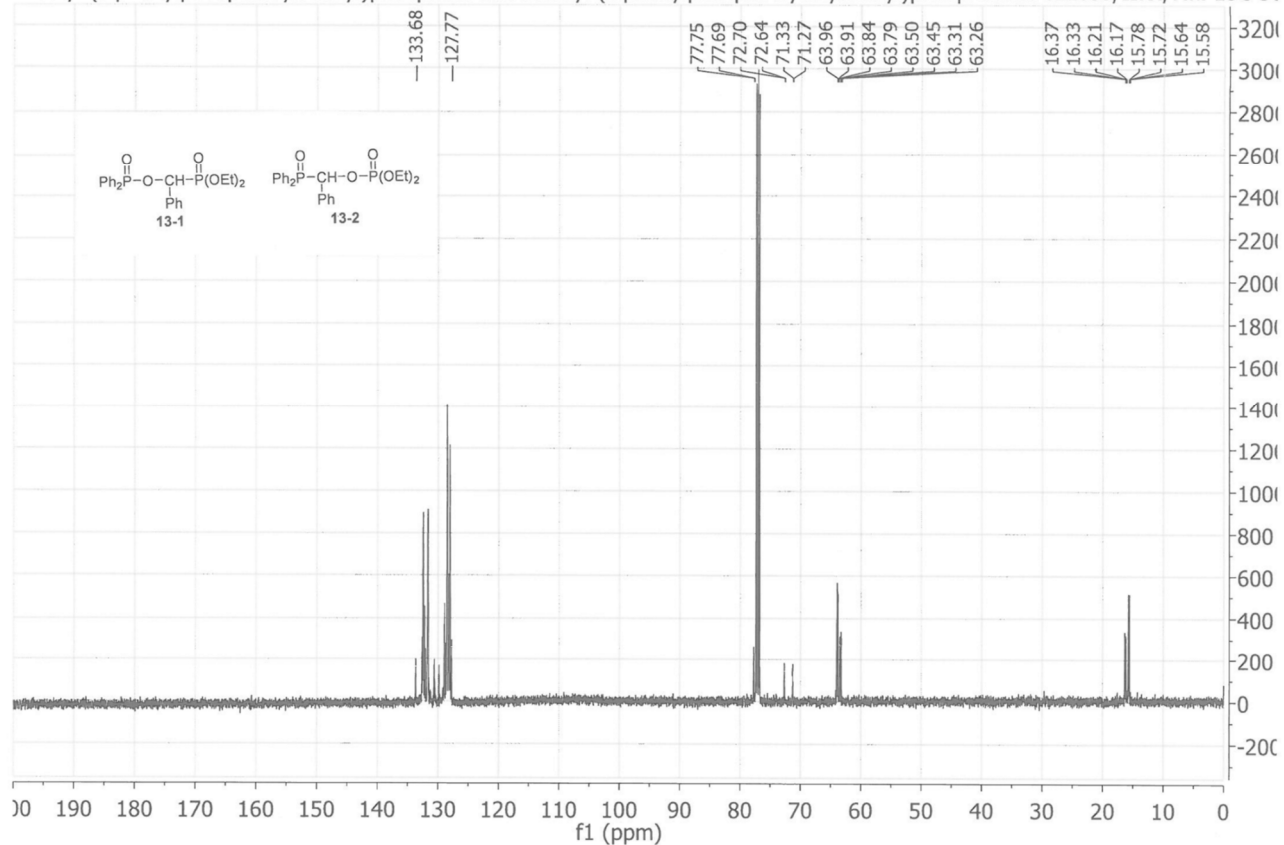
Diethyl 1-diphenylphosphinoyl-1-hydroxy-ethylphosphonate SzZs84átkr. 1H 500MHz



Diethyl (diphenylphosphinoylbenzyl)phosphate and Diethyl (diphenylphosphinoyloxybenzyl)phosphonate SzZs83/II.o./7.fr. 31P 5C



Diethyl (diphenylphosphinoylbenzyl)phosphate and Diethyl (diphenylphosphinoyloxybenzyl)phosphonate SzZs83/II.o./7.fr. 13C 50



Diethyl (diphenylphosphinoylbenzyl)phosphate and Diethyl (diphenylphosphinoyloxybenzyl)phosphonate SzZs83/II.o./7.fr. 1H 50

