

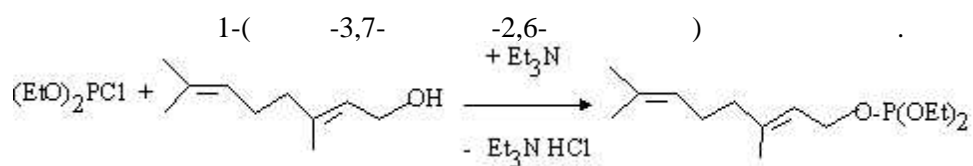
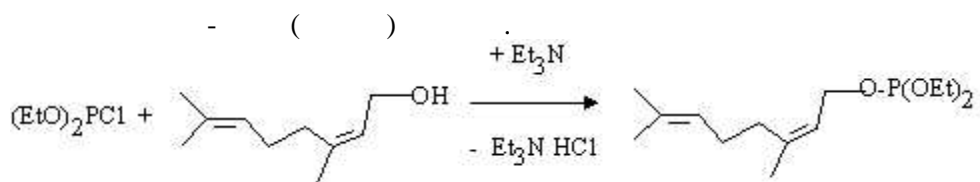
$\delta$  111.8 . . .

$\text{Ph}_2\text{POR}$  [4].  $\delta$  113 . . [4].

$\text{DCl}_3$   $\delta$  7.28-7.58 7.67-7.70 . .

$\nu$  ( = )  $\nu$  (C-H, Ar),  $\nu$  1667  $\nu$  3056  $\nu$  1591 1483  
 $\nu$  ( = , Ar).  $m/z$  338, : 338.2). -3,7-  
 -2,6- -1- ( )  $[\text{M}]^+$  ( )

( - 3,7- -2,6- -1- ) 1

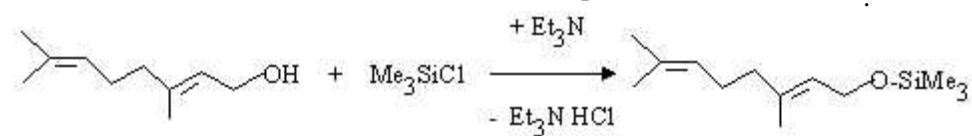


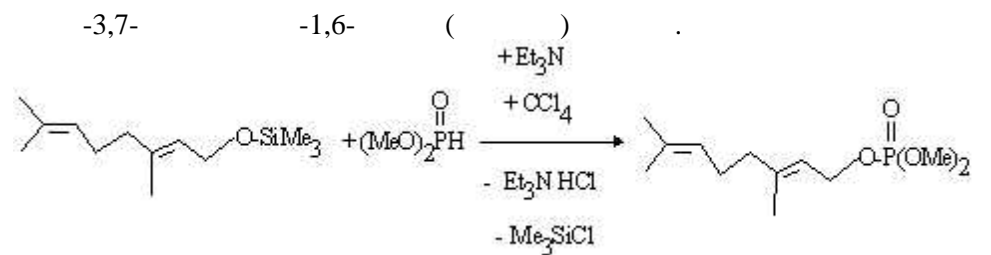
[4].

( $\delta$  138.3 . . )  
 ( $\delta$  138.9 . . ).  
 ( $\delta$  1.42 . . )  
 ( $\delta$  1.26 . . ).  
 ( $^3J_{\text{H}}$  6.5 ) , ( $^3J_{\text{H}}$  7.2 ).  
 $\nu$  985  $^{-1}$ ,  $\nu$  1030  $^{-1}$   $\text{PO}_3$   $\nu$  745  $^{-1}$  =  $\nu$  1608  $^{-1}$ , OC-C  $\nu$  931  $^{-1}$ , 1669  $^{-1}$ .

[1].

-1-





60      6.5      -3,7-      -1,6-  
 ( )  
 31  
 δ 1.5  
 [4].  
 ν 1670, 1251, 1061  
 =, P=O [(P)O-C],  
 -3,7-  
 m/z 262  
 1,6- ( )  
 [M]<sup>+</sup> ( : 262.2).

-c      Bruker Vector-22  
 KBr.      31  
 Bruker CXP-100 (36.5, -85%  
 δ 3 4)      6 6'  
 (400 )      1  
 CDCl<sub>3</sub> c  
<sup>13</sup>C      Bruker MSL-400  
 - (Me<sub>3</sub>Si)<sub>2</sub>O  
 )      CDCl<sub>3</sub>      Bruker MSL-400 (100.6  
 Turbomass Gold Perkin Elmer.

6.4 (41.7 ) <sup>-3,7-</sup> <sup>-2,6-</sup> 4.2 (41.5 ) <sup>-1-</sup> ( ) . 50 -

20  
9.2 (41.7 ) . 4

20  
(0.5 . .) 40 1 (0.04 . .) 40 . -

8.5 (60 %) <sup>-3,7-</sup> <sup>-2,6-</sup> -1-  
( ) ,%: 8.97. C<sub>22</sub>H<sub>27</sub>OP. ,%: 9.15.

1-( <sup>-3,7-</sup> <sup>-2,6-</sup> ) . 6.0  
(38.9 ) 4.7 (46.4 ) 60 -

20  
1 6.1 (39.0 ) . ~12  
~20 ( )

20 ). 1 (0.5 . .) 10.5  
40 1 (0.06 . .) 40 . n<sub>D</sub><sup>20</sup> 1.4710. ,

(98 %) 1-( <sup>-3,7-</sup> <sup>-2,6-</sup> )  
%: 10.54. C<sub>14</sub>H<sub>27</sub>O<sub>3</sub>P. ,%: 11.29.

1-( <sup>-3,7-</sup> <sup>-2,6-</sup> )  
(39.0 ) 6.0 (38.9 ) , 4.7 (46.4 ) 6.1  
10.4 (97 %) n<sub>D</sub><sup>20</sup> 1.4703. ,

%: 11.38. C<sub>14</sub>H<sub>27</sub>O<sub>3</sub>P. ,%: 11.29.

1-( <sup>-3,7-</sup> <sup>-2,6-</sup> )  
20.0 (129.6 ) 13.1 (129.4 ) 100  
( . . 70-100 ) 15 -

14.1 (129.8 ) -  
4 20 .

1 -  
(0.5 . .) 40 1 (0.02 . .) -

40 . (16.3 ) -  
15.3 (52 %) .

120 (0.05 . .), n<sub>D</sub><sup>20</sup> 1.4535. ,  
%: Si 12.01. C<sub>13</sub>H<sub>26</sub>OSi. ,%: Si 12.37.

<sup>-3,7-</sup> <sup>-1,6-</sup> ( ) . 0.7 (6.4  
) , 1.4 (6.2 ) -

, 0.54 (6.5 ) 1.0 (6.5 ) -  
10 ( )

60 6.5 .

1  
(0.5 . .) 40 1 (0.02 . .) 40 .  
1.0 (59 %) <sup>-3,7-</sup> <sup>-1,6-</sup> ( ) ,  
( ) , n<sub>D</sub><sup>20</sup> 1.4554.

), R<sub>f</sub> 0.92 (Silufol UV-254, ) n<sub>D</sub><sup>20</sup> 1.4554.  
,%: 11.84. C<sub>12</sub>H<sub>23</sub>O<sub>4</sub>P. ,%: 11.82.  
( 03-03-96208).

- [1] . . . // . . . .  
- . 2004. 2. . 129-138.
- [2] . . . // . . . . 2004. . 74. 8. . 1396-1397. . .
- [3] . . . // . . . . 2004. . 40. 6. . 946-947.
- [4] Crutchfield M.M., Dungan C.H., Letcher J.H., Mark V., Van Wazer J.R. Topics in phosphorus chemistry. P<sup>31</sup> Nuclear magnetic resonance. / Eds. by M. Grayson, E.J. Griffith. New York, London, Sidney. 1967. V. 5.