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(12)(KR)  
(A)(51) 。 Int. Cl. 7  
C07F 7/16(11)  
(43)2002 - 0004868  
2002 01 16(21) 10 - 2001 - 0039711  
(22) 2001 07 04

(30) 10032632.3 2000 07 05 (DE)

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(72) ,  
51373 - - 329  
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51371 2  
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86462 24

(74)

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(54)

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8) ( ) (Ruppert et al., Tetrahedron Lett. 25, 1984, 2195 - 219)  
 ( ) (Pawelke, J. Fluorine Chem. 42, 1989, 429 - 433)

가

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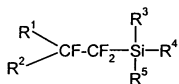
(Grobe et al., Synlett, 1995, 641 - 642).

, Smith et al., J. Organomet. Chem. 46, 1972, 251 - 254).

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2 3

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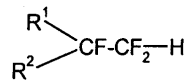
R<sup>1</sup> R<sup>2</sup>  
 , C<sub>1</sub> - C<sub>8</sub> - , C<sub>6</sub> - C<sub>14</sub> - , C<sub>1</sub> - C<sub>8</sub> - , C<sub>1</sub> - C<sub>8</sub>  
 C<sub>6</sub> - C<sub>14</sub> - , C<sub>6</sub> - C<sub>14</sub> - , C<sub>1</sub> - C<sub>4</sub> - , C<sub>1</sub> - C<sub>4</sub> - , C<sub>6</sub> - C<sub>14</sub> - , C<sub>1</sub> -  
 C<sub>4</sub> - , C<sub>6</sub> - C<sub>14</sub> - , COO(C<sub>1</sub> - C<sub>6</sub> - )  
 1

R<sup>3</sup> R<sup>5</sup>  
 C<sub>1</sub> - C<sub>4</sub> - , C<sub>1</sub> - C<sub>4</sub> - , C<sub>6</sub> - C<sub>14</sub> - , C<sub>1</sub> - C<sub>8</sub> - , C<sub>6</sub> - C<sub>14</sub> - , C<sub>1</sub> - C<sub>4</sub> - , C<sub>1</sub> - C<sub>4</sub> - , C<sub>6</sub> - C<sub>14</sub> - , C<sub>1</sub> -  
 C<sub>6</sub> - C<sub>14</sub> - , COO(C<sub>1</sub> - C<sub>6</sub> - )  
 1

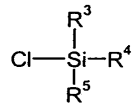
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3



, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> R<sup>5</sup>

2

R<sup>1</sup>

R<sup>2</sup>가

2

R<sup>1</sup> , C<sub>1</sub> - C<sub>8</sub> - , C<sub>1</sub> - C<sub>8</sub> - C<sub>6</sub> - C<sub>14</sub> - , R<sup>2</sup>가

3

R<sup>3</sup>

R<sup>5</sup>가

, C

C<sub>1</sub> - C<sub>4</sub> - , C<sub>1</sub> - C<sub>4</sub> - , C<sub>6</sub> - C<sub>14</sub> - , C<sub>1</sub> - C<sub>4</sub> - , C<sub>1</sub> - C<sub>4</sub> - , C<sub>6</sub> - C<sub>14</sub> - , COO(C<sub>1</sub> - C<sub>6</sub> - )  
 C<sub>6</sub> - C<sub>14</sub> - , C<sub>1</sub> - C<sub>6</sub> - 1

R<sup>3</sup> R<sup>5</sup>가 C<sub>1</sub> - C<sub>6</sub> - 3

2

R<sup>1</sup> , R<sub>3</sub> R<sub>5</sub>가 , C<sub>1</sub> - C<sub>8</sub> - , C<sub>1</sub> - C<sub>8</sub> - C<sub>6</sub> - C<sub>14</sub> - , R<sub>2</sub>가

3

1 2 , 0.5 20 , 0.9 5

t- ( ) n- ( ) t- (complexing agents) 가

가

1 2 2 , 0.5 20 , 0.9 5

3 가

t-

, -100 +200°C, -20 +20°C, -5 +10°C

3

2

1

R<sup>1</sup> R<sup>2</sup> C<sub>1</sub>-C<sub>8</sub> C<sub>6</sub>-C<sub>14</sub> C<sub>1</sub>-C<sub>8</sub> C<sub>1</sub>-C<sub>8</sub> C<sub>3</sub>-C<sub>9</sub> C<sub>1</sub>-C<sub>8</sub> C<sub>6</sub>-C<sub>14</sub> C<sub>6</sub>-C<sub>14</sub> C<sub>1</sub>-C<sub>4</sub> C<sub>1</sub>-C<sub>4</sub> C<sub>6</sub>-C<sub>14</sub> COO(C<sub>1</sub>-C<sub>6</sub>)<sub>1</sub>

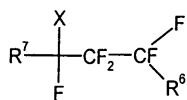
R<sup>3</sup> R<sup>5</sup> C<sub>1</sub>-C<sub>4</sub> C<sub>1</sub>-C<sub>4</sub> C<sub>6</sub>-C<sub>14</sub> C<sub>1</sub>-C<sub>8</sub> C<sub>6</sub>-C<sub>14</sub> C<sub>1</sub>-C<sub>4</sub> COO(C<sub>1</sub>-C<sub>6</sub>)<sub>1</sub>

R<sup>2</sup> 가 , R<sup>1</sup> 가

1, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>5</sup>, C<sub>1</sub>-C<sub>6</sub>, C<sub>1</sub>-C<sub>4</sub>, C<sub>1</sub>-C<sub>4</sub>, C<sub>6</sub>-C<sub>14</sub>, COO(C<sub>1</sub>-C<sub>6</sub>), R<sub>3</sub>, R<sub>5</sub>, R<sup>1</sup>, C<sub>1</sub>-C<sub>8</sub>, C<sub>1</sub>-C<sub>8</sub>, C<sub>6</sub>-C<sub>14</sub>, R<sup>2</sup>가

4

4



X, R<sub>6</sub>, C<sub>1</sub>-C<sub>8</sub>, C<sub>1</sub>-C<sub>8</sub>, C<sub>6</sub>-C<sub>14</sub>, C<sub>1</sub>-C<sub>4</sub>, C<sub>1</sub>-C<sub>4</sub>, C<sub>6</sub>-C<sub>14</sub>, COO, (C<sub>1</sub>-C<sub>6</sub>), 1

R<sup>7</sup>, C<sub>6</sub>-C<sub>14</sub>, C<sub>6</sub>-C<sub>18</sub>

4

X가

R<sup>6</sup>, C<sub>1</sub>-C<sub>4</sub>, C<sub>1</sub>-C<sub>4</sub>, 1

R<sup>7</sup>, C<sub>5</sub>-C<sub>8</sub>, C<sub>5</sub>-C<sub>8</sub>, C<sub>4</sub>-C<sub>18</sub>, C<sub>1</sub>-C<sub>12</sub>, 1

4

X가 ,

R<sup>6</sup> 가 C<sub>4</sub> - C<sub>18</sub> - C<sub>1</sub> - C<sub>12</sub> - - C<sub>5</sub> - C<sub>8</sub> -

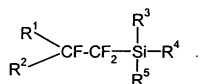
6

1

5

4

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R<sup>1</sup> 4 R<sup>6</sup>

R<sup>2</sup> ,

R<sup>3</sup> R<sup>5</sup> , C<sub>1</sub> - C<sub>4</sub> - , C<sub>1</sub> - C<sub>4</sub> - , C<sub>6</sub> - C<sub>14</sub> - , C<sub>1</sub> - C<sub>8</sub> - , C<sub>6</sub> - C<sub>14</sub> - , , C<sub>1</sub> - C<sub>4</sub> - , - , C<sub>6</sub> - C<sub>14</sub> - - , COO(C<sub>1</sub> - C<sub>6</sub> - ) 1

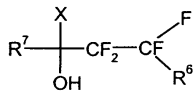
5

R<sup>7</sup>-Y

Y - SiR<sup>3</sup> R<sup>4</sup> R<sup>5</sup>

R<sup>7</sup> C<sub>6</sub> - C<sub>14</sub> - C<sub>6</sub> - C<sub>18</sub> - .

6



R<sup>6</sup> 1 R<sup>1</sup>

R<sup>7</sup> 5

가

6 OH F

$R^6$ ,  $C_6 - C_{14}$ ,  $R^2$ ,  $R^3$ ,  $R^5$ ,  $C_1 - C_4$ ,  $C_1 - C_4$ ,  $C_6 - C_{14}$ ,  $R^1$ ,  $C_1 - C_8$ ,  $C_1 - C_6$ ,  $C_1 - C_4$ ,  $C_6 - C_{14}$ ,  $COO(C$

$R^2$ 가,  $R^3$ ,  $R^5$ 가,  $C_1 - C_6$ ,  $R^1$

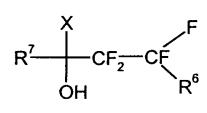
$C_6 - C_{18}$ ,  $C_5 - C_8$ ,  $C_4 - C_{18}$ ,  $R^7$ ,  $C_1 - C$ ,  $Y$ 가

$R^7$ ,  $C_4 - C_{18}$ ,  $C_1 - C_{12}$ ,  $C_5 - C_8$ ,  $Y$ , 5

$R^2$ 가,  $R^7$ ,  $R^3$ ,  $R^5$ 가,  $C_1 - C_6$ ,  $R^1$ ,  $C_4 - C_{18}$ ,  $C_1 - C_{12}$ ,  $C_5 - C_8$ ,  $Y$ 가

5, 4, 6

< 6 >



0, 4, 0.9, 5, 1, 2, 5, 1, 0.5, 2

[ ]

1

t- 300 ml 13.6 g(125.1 ml) 1  
 L 4 가 , 0°C ,  
 15.75 g(81.2 mmol) 가 n- 50 ml(125 mmol) 가  
 0°C , ,

: 1,1,2,2- -2- 9.2 g(43%).

: 10 mbar 91 92.5 °C.

(m/e): (M<sup>+</sup>)266, (M<sup>+</sup> - 115)151, (M<sup>+</sup> - 189)77, (M<sup>+</sup> - 215)51.

<sup>19</sup>F - NMR : - 86 ppm(s, 2F, CF<sub>2</sub>); - 131 ppm(s, 2F, CF<sub>2</sub>).

2

t- 300 ml 12.5 g(150 ml) 1 L  
 4 가 , 0°C , 1  
 0 g(83.4 mmol) 가 n- 62.5 ml(125 mmol) 가 .  
 0°C , ,

: 10.5 g(54%).

: 30 mbar 50 °C.

3

t- 450 ml 27 g(180 ml) 1 L 4  
 가 , 0°C ,  
 23.8 g(180 mmol) 가 n- 135 ml(270 mmol) 가 .  
 0°C , ,  
 1,1,2,2- -2- 10%

: 64 mbar 32 °C.

(m/e): (M<sup>+</sup> - 29)217, (M<sup>+</sup> - 129)127, (M<sup>+</sup> - 153)177, (M<sup>+</sup> - 187)59, (M<sup>+</sup> - 217)29.

<sup>19</sup>F - NMR : - 93 ppm(s, 2F, CF<sub>2</sub>); - 126 ppm(s, 2F, CF<sub>2</sub>).

(57)

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4.

1 3 , 가 .

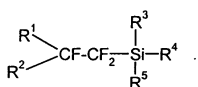
5.

1 4 , 가 2 , 0.5 20 .

6.

1 .

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,  
 $R^1$   $R^2$  ,  $C_1-C_8-$  ,  $C_6-C_{14}-$  ,  $C_1-C_8-$  ,  $C_1-C_8-$  ,  $C_3-C_9-$  ,  $C_1-C_8-$  ,  $C_6-C_{14}-$  ,  $C_6-C_{14}-$  ,  $C_6$  ,  $C_1-C_4-$  ,  $C_1-C_4-$  ,  $C_6-C_{14}-$  ,  $COO(C_1-C_6-$  ) ,  $C_1-C_4-$  ,  $C_6-C_{14}-$  ,  $COO(C_1-C_6-$  )

$R^3$   $R^5$  ,  $C_1-C_4-$  ,  $C_1-C_4-$  ,  $C_6-C_{14}-$  ,  $C_1-C_8-$  ,  $C_6-C_{14}-$  ,  $C_1-C_4-$  ,  $C_1-C_4-$  ,  $C_6-C_{14}-$  ,  $COO(C_1-C_6-$  ) ,  $C_1-C_4-$  ,  $C_6-C_{14}-$  ,  $COO(C_1-C_6-$  ) ,  $R^2$  가 ,  $R^1$  ,  $R^1$  ) .

7.

6 ,  $R^1$  6 ,  $R^2$  가 ,  $R^3$   $R^5$  ,  $C_1-C_6-$  ,  $C_1-C_4-$  ,  $C_1-C_4-$  ,  $C_6-C_{14}-$  ,  $COO(C_1-C_6-$  ) ,  $C_1-C_4-$  ,  $C_6-C_{14}-$  ,  $COO(C_1-C_6-$  ) ,  $R^2$  가 ,  $R^1$  ) .

8.

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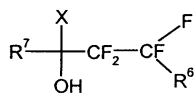
9.

1 1 .

10.

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X

R<sup>6</sup> , , -C<sub>1</sub>-C<sub>8</sub>- , C<sub>1</sub>-C<sub>4</sub>- , C<sub>6</sub>-C<sub>14</sub>- ,  
 , C<sub>1</sub>-C<sub>4</sub>- , C<sub>1</sub>-C<sub>4</sub>- , C<sub>6</sub>-C<sub>14</sub>- ,  
 C<sub>1</sub>-C<sub>6</sub>- ) , C<sub>1</sub>-4 - , - , - , C<sub>6</sub>-C<sub>14</sub>- - , COO(

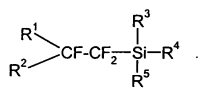
R<sup>7</sup> C<sub>6</sub>-C<sub>14</sub>- C<sub>6</sub>-C<sub>18</sub>- .

11.

10 , X가 , R<sup>6</sup>가 , , -C<sub>1</sub>-C<sub>4</sub>- , C<sub>1</sub>-C<sub>8</sub>-  
 , , , 1 , R<sup>7</sup>  
 -C<sub>5</sub>-C<sub>8</sub>- C<sub>5</sub>-C<sub>8</sub>- 1 C<sub>4</sub>-C<sub>18</sub>- , C<sub>1</sub>-C<sub>12</sub>-

12.

6 , 1 5  
 < 1 >



R<sup>1</sup> 10 R<sup>6</sup> ,

R<sup>2</sup> ,

$R^3$  ,  $R^5$  ,  $C_1 - C_4 -$  ,  $C_1 - C_4 -$  ,  $C_6 - C_{14} -$  ,  $C_1 - C_8 -$  ,  $C_6 - C_{14} -$  ,  $C_1 - C_4 -$  ,  $C_6 - C_{14} -$  ,  $COO(C_1 - C_6 - )$  ,  $1$

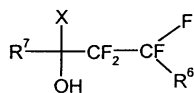
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$R^7-Y$

$Y - SiR^3 R^4 R^5$

$R^7$  ,  $C_6 - C_{14} -$  ,  $C_6 - C_{18} -$  .

< 6 >



$R^6$  ,  $1$  ,  $R^1$  ,

$R^7$  ,  $5$  .

13.

10 .