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(12)

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(A)

(51) Int. Cl.⁷
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(43)

10-2004-0044347
2004 05 28

(21) 10-2003-0080996
(22) 2003 11 17

(30) 10/302,574 2002 11 20 (US)

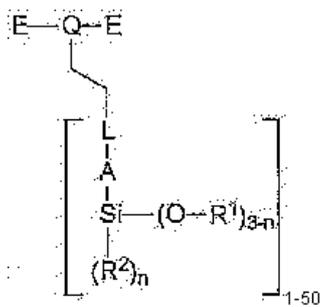
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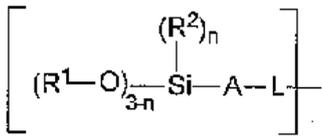
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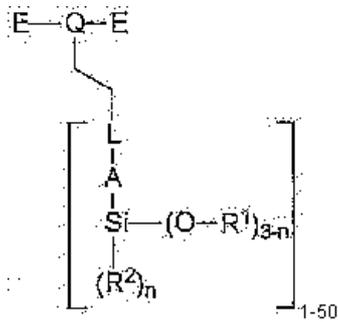


, E ; A ; L ; Q -

, , , , ,



, n 0, 1, 2 ; R¹ ; R² 1 4 ;
 A ; L ;
 가 (linking group) ,
 1 ,
 가 ,
 - , - , N- -()- , N- -
 - - -()- ; 3- , 3-
 , 3- ,
 (, 가) ,
 가 ,
 가



, Q - ; n 0, 1, 2 ; R² ; A (hydroc
 arbyl group), ; L
 ; E
 가 가
 가

가 , 2 .
 , 가 , .
 , () ()
 가 20% 1 , 가 ,
 가 .

1: () (PBD)

1:1 Boutevin, G.,
 Ameduri, B., Boutevin, B., Joubert, J-P., *Journal of Applied Polymer Science*, 75, 1655-1666, 2000

10 PBD 2- 가 가 85 ,
 가 1.6 (AIBN) 가 , 4 가 AIBN 가 2
 8 , , 가 AIBN 가

2:

1 , 가 / 가 3
 , 60 가
 () 가 가 1 , 60 가 3 가 .
 10 가 ,

3: () - - SM-E

1:1
 Schapman, F., Couvercelle, J.P., Bunel, C., *Polymer*, 1998, Vol. 39, No. 20
 가 ()

20% 1 .
 10 () 가 가 85 , 1.6 AIBN 가 , 4 가 2 가 .
 8 , , AIBN 가

4:

1 , 가 / 가 3
 , 60 가 가 1
 10 가 , 60
 가 3 가 ,

5:

1 가 가 3 THF 가
 1 THF 0 10 가 ,
 12
 가 MgSO₄

6:

1 53 5 50% NaOH, 1
 3 , 75 5
 MgSO₄

7:

E.W. Collington A.I. Meyers, *J. Org. Chem.* **36**, 3044(1971) . 1

1 1.1 S- . 0 1.1
 . 0 1-1.5 ,
 가 - (1:1) , 가 가 . s-
 (NaSO₄), ,

8:

1 0 가 4 ,
 1 /

9:

가 1 Dean Stark 4 , 1
 . (110). 4 Dean Stark
 , 가 30 ,
 , 30 , 4
 , /

10:

가 가 (IV)
 1 (H₂PtCl₆, Aldrich) 가 , 80 가 , 1
 가 80 가 1 가

11:

T. Nishikubo, E. Takehara A. Kameyama, *Polymer Journal*, **25**, 421(1993)

가 1 1 80 2 가 /
 ,

12:

1 1 가 () (I) 가 ,
 80-85 가 6 가

13: ()

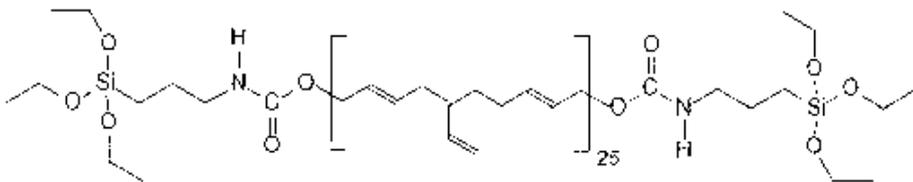
1 PBD 가 , 2 60 가 . Karstedt 1 가 , 가 가
 2117 cm⁻¹ Si-H 가 1 가 , 가 가
 3 PBD , 60 8 가 , PBD 2

14:

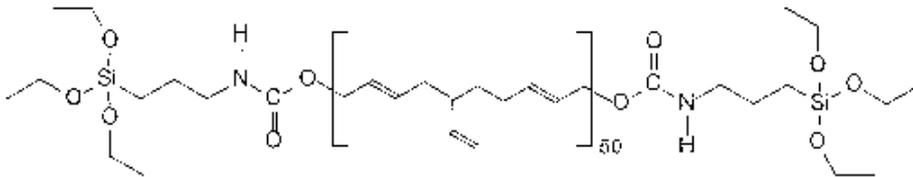
1 가 0 4 1

SM

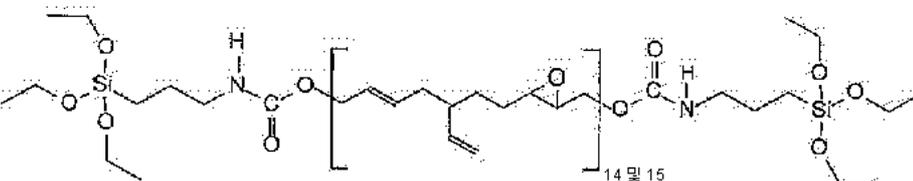
SM-A: 2 SM-G SM-V



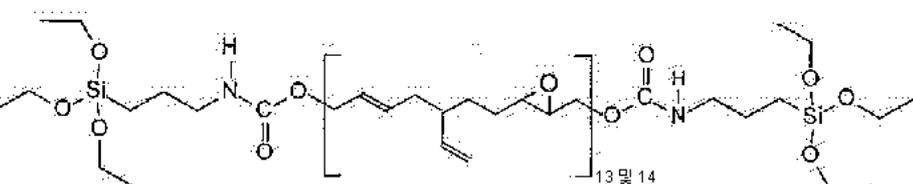
SM-B: 2 PBD SM-H SM-V



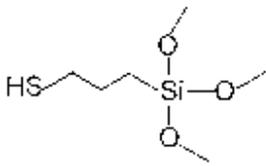
SM-C: 2 SM-I SM-V



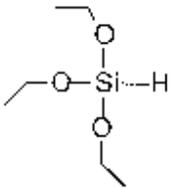
SM-D: 2 PBD SM-19 SM-V



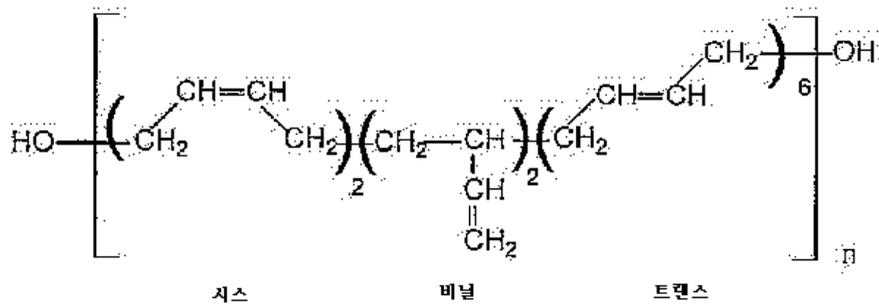
SM-E: - , Witco Corp. Silquest A-189



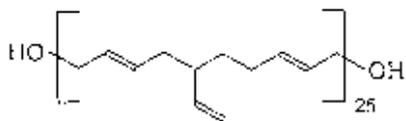
SM-F: , Wright Corporation



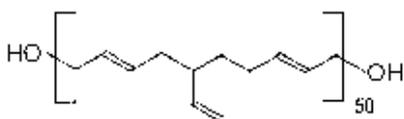
SM-G: PBD, Elf Atochem PolyBD R-2OLM



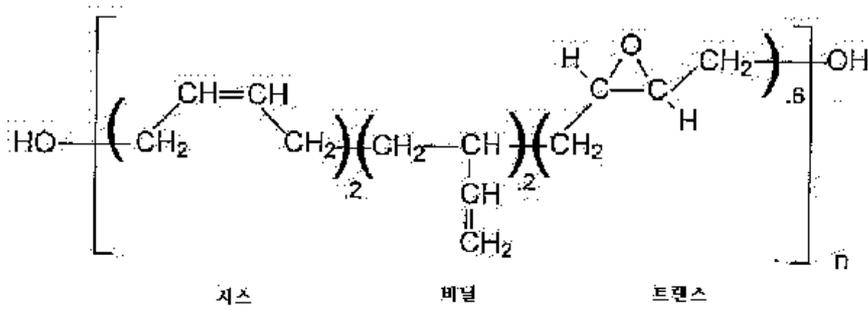
20% , 20% , 60% , n 25



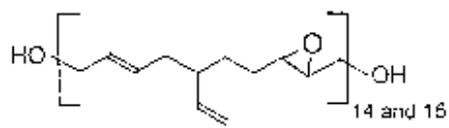
SM-H: PBD, Elf Atochem n 50 PolyBD R-45 HTLO SM-G



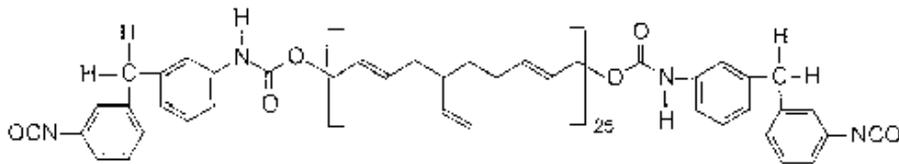
SM-I: PBD, Elf Atochem Poly bd 600



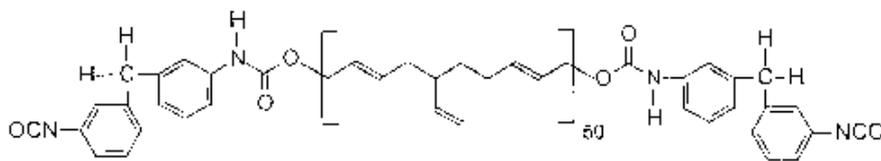
5 (20% , n 14 , 20% , n 15 , 60% , n 14 1).



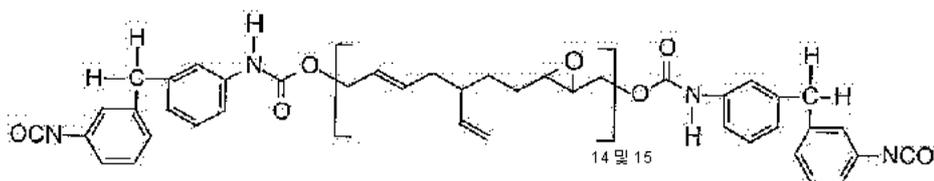
SM-J: 2 4,4'-() (MDI) SM-G



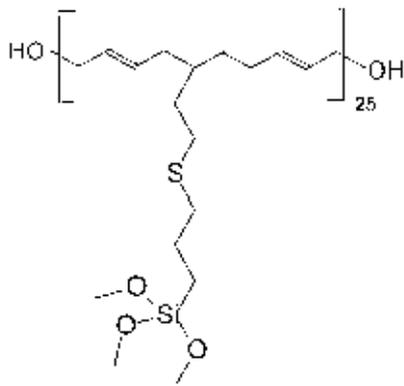
SM-K: 2 MDI SM-H



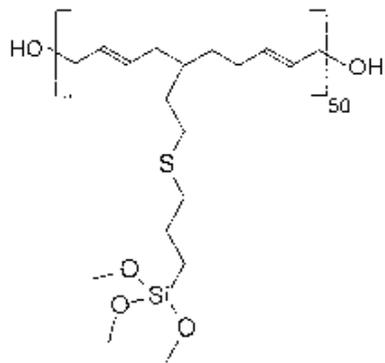
SM-L: 2 MDI SM-I



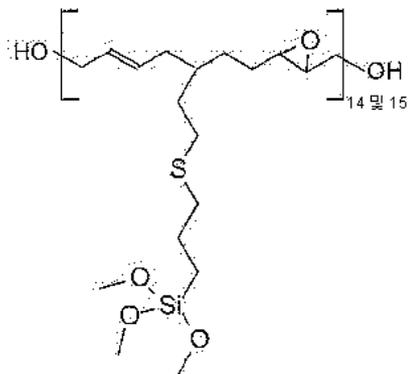
SM-M: 3 SM-E SM-G



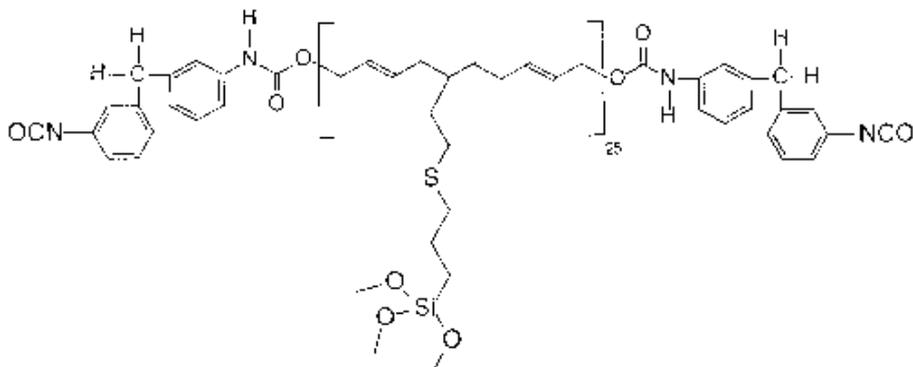
SM-N: 3 SM-E SM-H



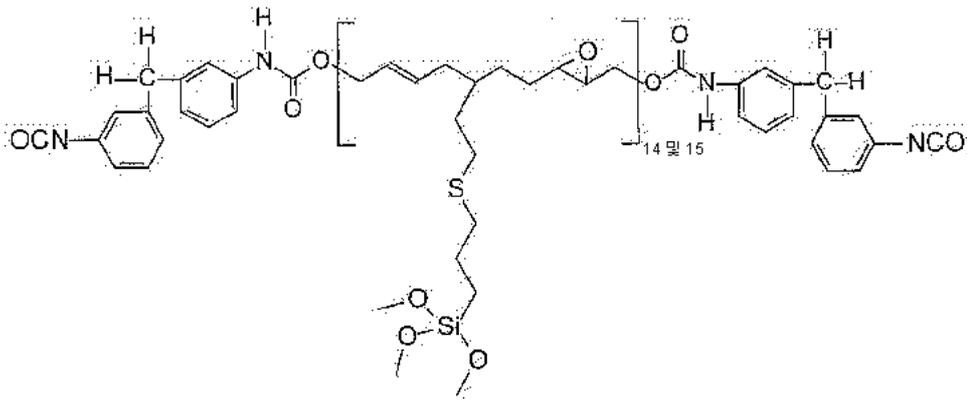
SM-O: 3 SM-E SM-I



SM-P: 2 MDI SM-M



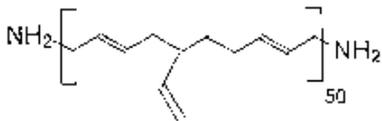
SM-Q: 2 MDI SM-O



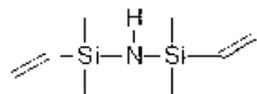
SM-R: 7 SM-H



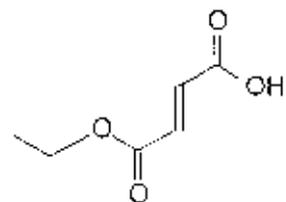
SM-S: 5 SM-R NH₃



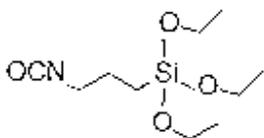
SM-T: 1,3- , Wright Corporation



SM-U:



SM-V: - , Witco Corp. Silquest A-1310

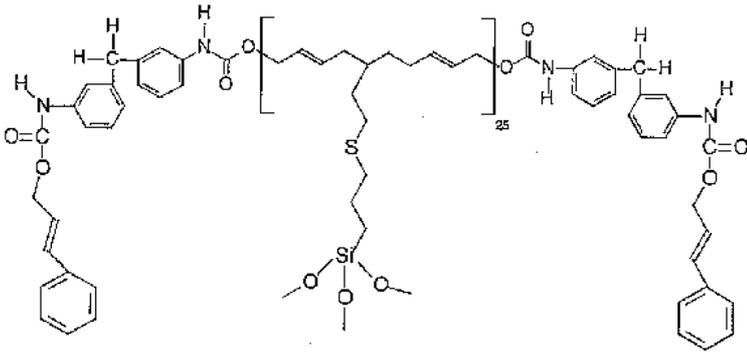


1-17

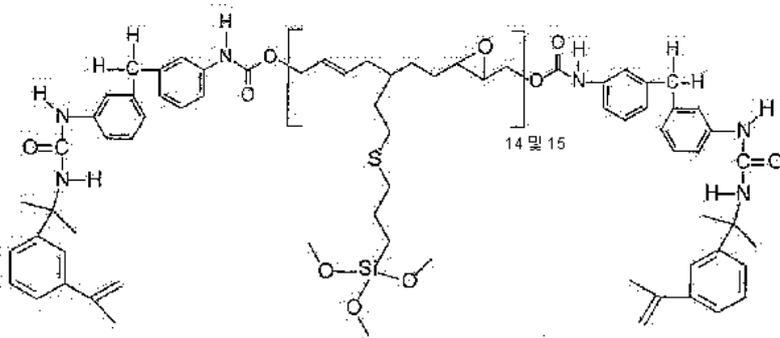
1 17

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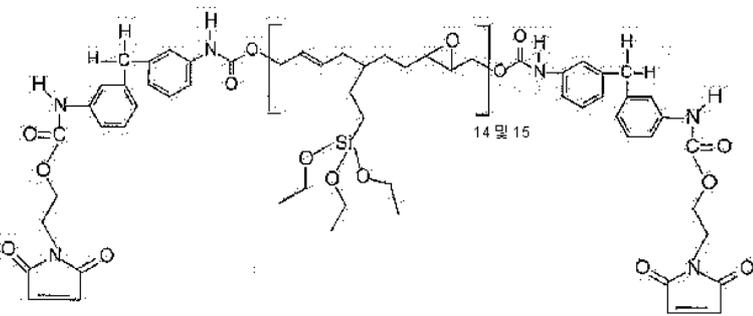
1: 2 SM-P



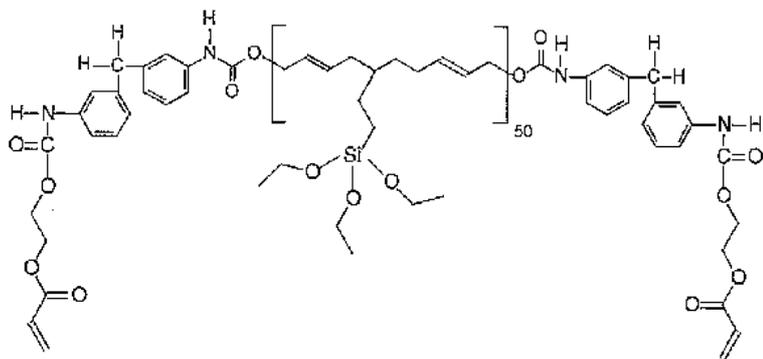
2: 4 SM-Q 3- - , -



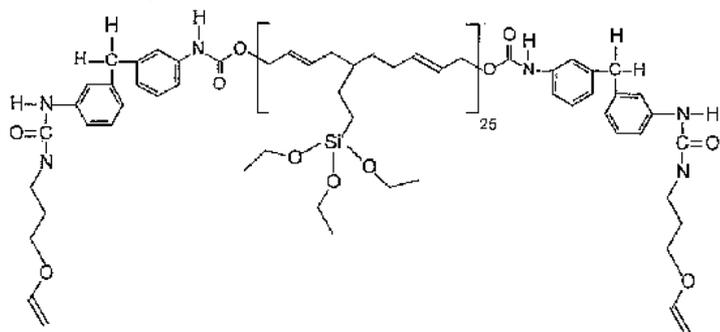
3: 10 SM-L SM-F , 2



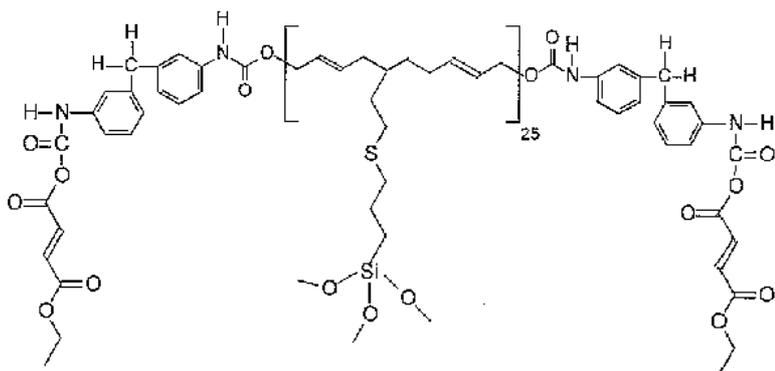
4: 10 SM-K SM-F , 2



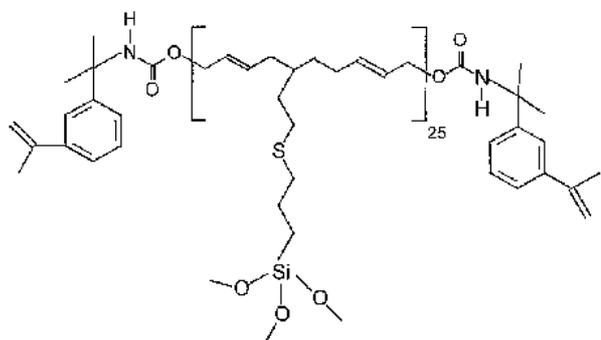
5: 10 SM-J SM-F , 2



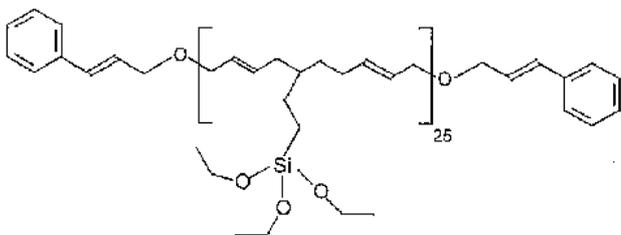
6: 11 SM-P SM-U



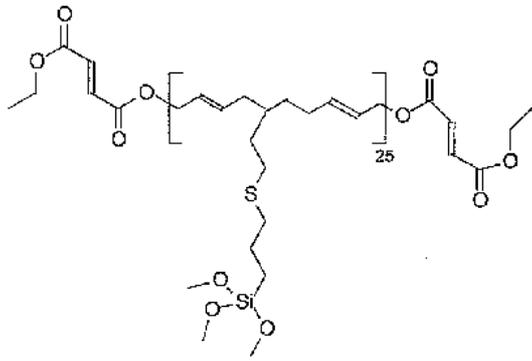
7: 2 SM-M 3- - , -



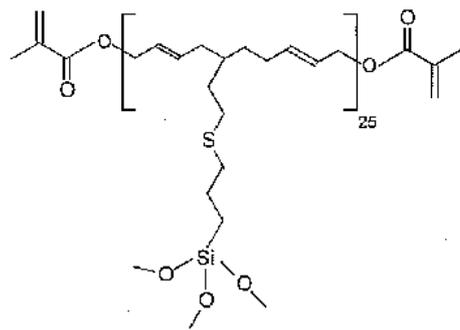
8: 6 SM-G , 10 SM-F



9: 9 SM-M SM-U

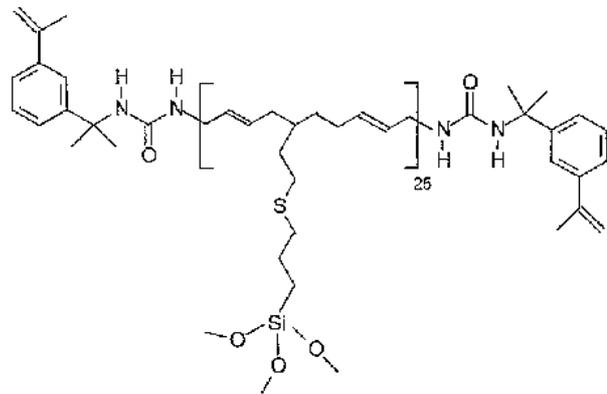


10: 8 SM-M 2-



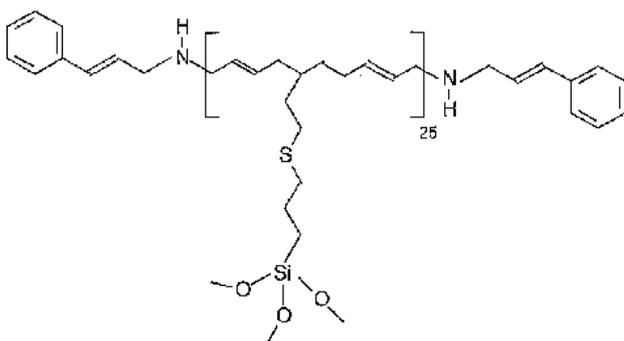
11: 3 SM-S SM-E

, 4 3- - , -



12: 5 SM-S

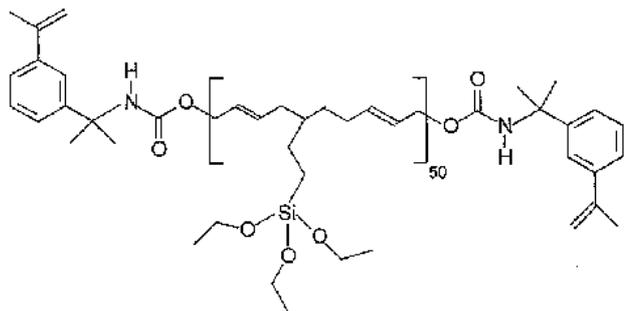
, 3 SM-E



13: 2 SM-H 3-

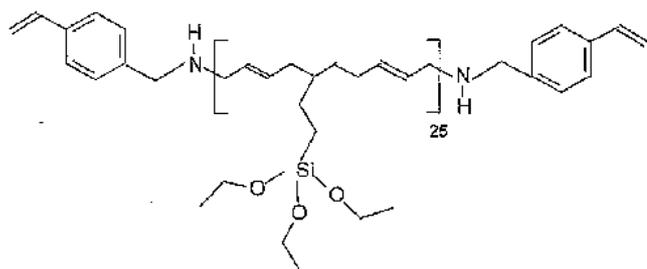
- , - ,

10 SM-F

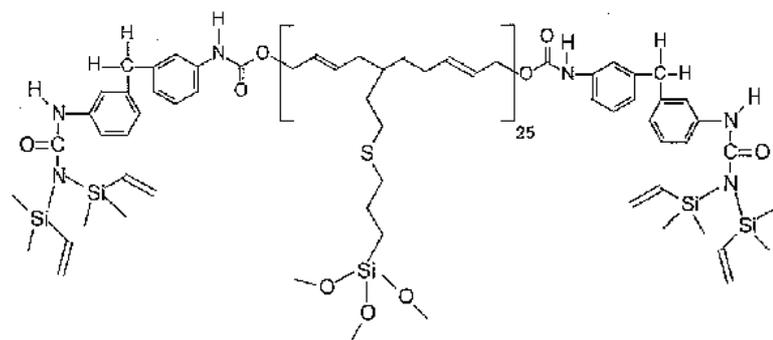


14: 4 SM-S 4-

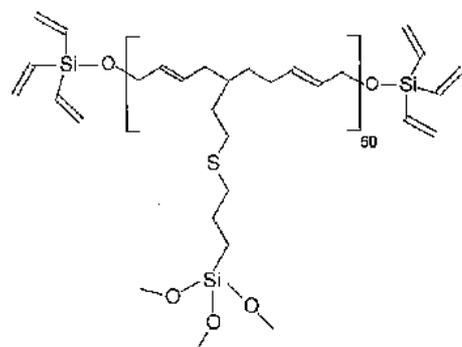
10 SM-F



15: 4 SM-T SM-P



16: 14 SM-N

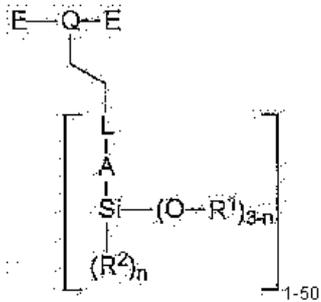


17: SM-M

가

(57)

1. 가 :



- (i) Q - ;
- (ii) E ;
- (iii) R¹ ;
- (iv) R² 1 4 , , ;
- (v) A (hydrocarbyl group) ;
- (vi) L (linking group) ;
- (vii) n 0, 1, 2 .

2.

1 ,

Q가 ()

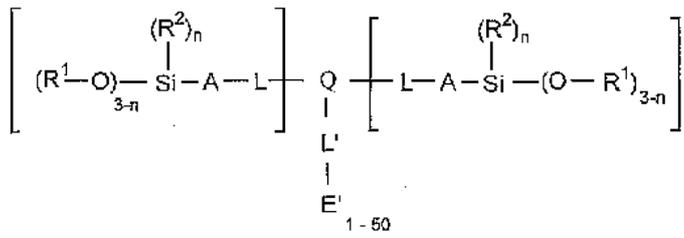
3.

1 ,

E가 , - 가

4.

가 :



(i) Q - ;

(ii) R¹ ;

(iii) R² 1 4 , , ;

(iv) A ;

(v) L , Q ;

(vi) n 0, 1, 2 ;

(vii) L' Q E' ;

(viii) E' .

5.

4 ,

Q가 ()

6.

1 4 ,

7.

1 4 ,