

(19) (KR)
 (12) (A)

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 (43)

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(86)	PCT/EP2002/005256	(87)	WO 2002/92673
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(30) 10122814.7 2001 05 11 (DE)

(71) , , 70619 가 , 15

, , 70619 가 , 15

(72) , , 70619 가 , 15

, , 70619 가 , 15

(74)

:

(54)

(A)	(B)	0.1	15 μ m	(C)
가 2				.

(B)	0.1 - 15 μ m,	0.5 - 8.0 μ m	,	0.5 - 0.8 μ m
-	,	,	,	.

20

,

,

2

2

가

가

가

(B) 0.1 15 μ m

: (A)

(C) 가

가
가

(C)

(A)

(B)

(B) μm , 0.1 15 μm , 0.5 8.0 μm , 1.0 7.0 μm , 0.1 2 μm

0 60 , % . 80 40 % . (A) (B) 2 80 % , 98 20 %, 90 30 % , 2

(B) (A)
(B) (A) 가 ,
(A), (Banbury),
(A) (B)
(THF), (DMSO), N- (NMP), (DMAc)
(非) (B) (A)

(B) , PCT/EP00/03910 (A) (underlay) WO 01/87992 .

10

가

(A)

(

2 30 %

5 20 %

가

가 (C)

가 (C)

(A)	,	(A)	(B)	,	(C)	, 가	(A)
가	-	(B)	T-	(die)		,	
,				(nip)	2	2	T-
120 (inflation)	350 ,	130 250	가	0.5 10 (,	, 100 380 ,)
120 (longitudinal)	350 ,	130 250		,	100 380 ,	0.5 15	1
20 350 ,	0 25%	가)가	2	,	, 80 380	가
(,	,	,	,	,	1	
				(drawing),			

(B) (illite), (sepiolite), (montmorillonite), (smectite),
 (dite), (amesite), (palygorskite), (muscovite), (allevardite),
 (beidellite), (nontronite), (hectorite), (saponite), (v
 ermiculite), (stevensite), (bentonite), (fluorine)
 2 (halloysite), (pillared) .
 , / .
 protonated)

가 . . / 가 , (B) /
, / (C) 가 .

$$(\text{Si}_2\text{O}_5^{2-})_n, \text{SiO}_4 \text{ (tetraeder)} / \text{Na, K, Mg, Al} / \text{Ca}$$

ession)

(rest)

가

1g
가
(meq)

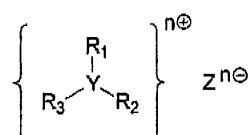
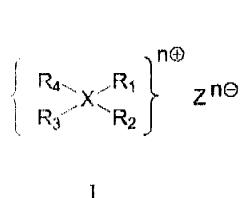
0.5, 0.8 1.3meq/g

가

가

1

I / II



R1, R2, R3, R4

, 1 40 , 1

1 20

2

5

10

X

Y

n 1 5 , 1 3

Z

Y가

, R1, R2, R3 1

가

가

Z

(mineral acid)

(suspension)

가

가

가

가

(hydrophobized)

2

2

가

2, 3 4가



(medium)

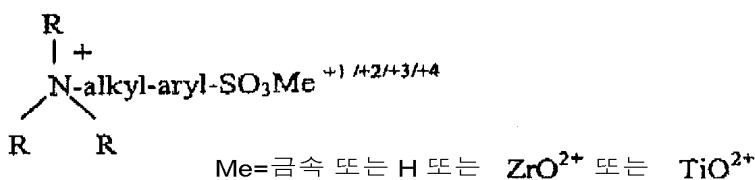
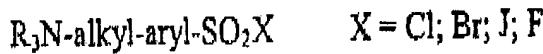
0	100	40	80
---	-----	----	----

가

(methyl iodide)

가-

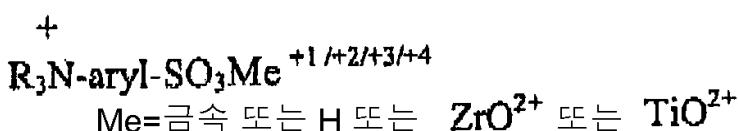
(sulfohalide)



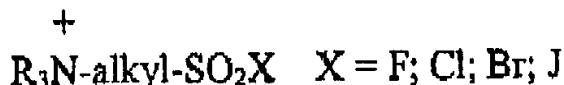
가-



가-



가-



가

1 5nm, 1.3 4nm

0 5 %

가

가

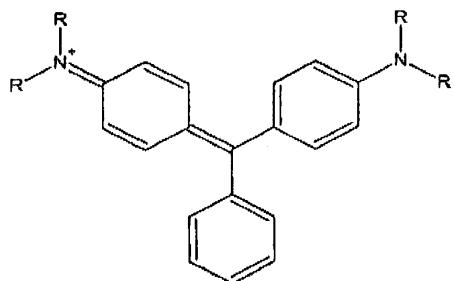
가
가

가

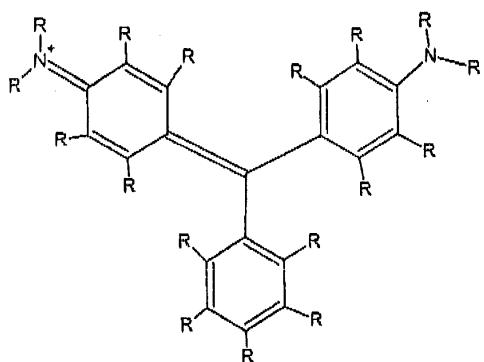
가

/

가



가



R , 1 40

(branched)

R

() ()

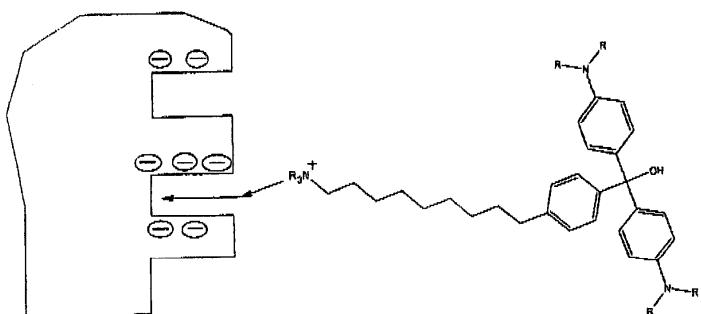
가

R1, R2, R3

DMAc, NMP)

24

(

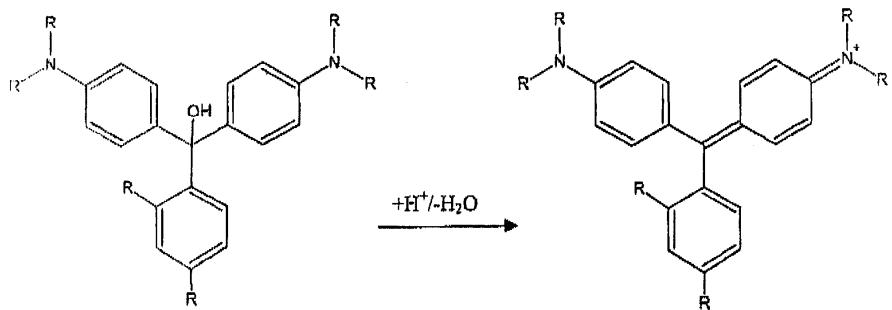


DE10024575.7

가

2

가



(), 가
%, , , 2 % 40 %, 가
%, 5 % 15 %, 1 % 70 %, 가

, (ZrOCl₂) 가 가 / 가

(B) , / 1 2 (C) 가

, 5 %, 80 %, 20 %, 70 %, 가
60 %, 30 %, 가

(A)

(1) ():

, 가 , ,
, 가 , ,
, (1,4- ,), (1,2- ,), , , (1,4- ,), (3,4- ,),
, (,), (, , - ,), (,)

- Nafion[®] Nafion[®] SO₂ Hal- (Hal = F, Cl, Br, I), Dow[®] GoreSelect[®]
(perflourinated)

- , , (2-), (3-), (4-), N-

- 1 (Het)

(Het)

- PEK Victrex[®], PEKEKK ULtrapek[®] PEEK Victrex[®], PEEKK,

- Idel[®], Radel R[®], Radel A[®],
PES Victrex[®]

- () PBI Celazol ® () , ()
- , (2,6-), (2,6-)
-
- (1, 4-) (1, 3- - 1, 4-), o- - 1, 4- , m-
- ()
- ()
- (phtalazione))

(2) A () 가):
A (1)

SO_3H , SO_3Me ; PO_3H_2 , PO_3Me_2 ; COOH , COOMe

SO_2X , POX_2 , COX with $\text{X} = \text{Hal}$, OR_2 , $\text{N}(\text{R}_2)_2$, , $\text{N}-$, $\text{N}-$)

SO_3H , SO_3Me ; PO_3H_2 , PO_3Me_2 SO_2X , POX_2 . ,

가 . () () .

(3) B (N- / 가):

B (1 , 2 , 3 (1 N 가)) . ,

$\text{N}(\text{R}_2)_3 + \text{Y}-$, $\text{P}(\text{R}_2)_3 + \text{Y}$, R_2 ;

$\text{N}(\text{R}_2)_2(1 , 2 , 3)$;

2 N- (het) 가 .

가 . , (het) , 1 , 2 3 (), () () .

(4) C (/ 가):

C (1) .

4a) : $\text{C}(\text{R}_{13}) = \text{C}(\text{R}_{14}\text{R}_{15})$ with $\text{R}_{13}, \text{R}_{14}, \text{R}_{15} = \text{R}_2 \quad \text{R}_4$

- 4b) Si (R₁₆ R₁₇)H with R₁₆, R₁₇ = R₂ R₄

4c) COX, -SO₂X, -POX₂

4d) -SO₂Me

4e) N(R₂)₂ with R₂ ≠ H.

가

- () 가 4a)
 () Pt 4b) 가 4a)
 () S- 가 (, Hal-(CH₂)_x -Hal, x = 3-20) 가 4d)
 () 3 N- 가 (, Hal-(CH₂)_x -Hal, x = 3-20) 가 4e)
 () N- S- 가 (, Hal-(CH₂)_x -Hal, x = 3-20) 가 4d)
 () 4c)
 () () () , () .
 (5) D (/ N / 가)
 :
 D (1) (2) , (3) 1, 2 3 N- / (4)

가

- D1 : 가 , / N- 가

D2: - 가 가

D3: / N- 가 가

D4: - / N- 가 가

(grain),
가가
가가
(end standing)가
가

70 % 가
cid)
(cavity)
가

50-60 % (phosphoric a

PEM , Vectra 950 ()
, 80

2 (A) 1
2
(percolation) 가

가
가
(bulking agent) 가

가
2 80
(, Nafion) 가

2 (T>80)
(ZrOCl₂)
가
가

(57)

1

2.

1

