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, 25313, , 27

, 25326, , 100 ,

(74)

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(54)

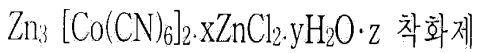
DMC (DOUBLE METAL CYANIDE) DMC ,  
DMC 1 0.2 ,  
(DOUBLE METAL CYANIDE ; DMC) .  
100 % ,

가 .

1 100 ppm  
(propylene oxide ; PO)  
2 5 X

(DOUBLE METAL CYANIDE ; DMC)

(DMC)  
(KOH)  
DMC 가 DMC  
가  
DMC ( )  
DMC t -  
DMC (EP-A-0654302).



DMC , US  
3,427,256 , 3,278,457 3,941,849 . 가 US 5,158,922  
가 DMC

100 %  
1 3 가  
0.6 US 5,158,922 DMC 1 0.2  
( US 5,158,922 ( )  
가 , t - 가 . t -  
KOH ,

105 2 g DMC 가 100 ppm 가  
(EP-A-0654302). t -

EP-A-0654302 1 0.5 1 0.2 X  
( 5 ),

EP-A-0654302 100 ppm 3 g  
PO 가 가 가 가  
가 가 가

ic complexing agent) (DMC) DMC 가 (organ DMC 1 0.2 DMC (EP - A - 0654302) ( 2 3 ). 100 ppm 3 g PO DMC ) US 5,158,922 KOH ) , EP - A - 0654302 0.006 meq/g DMC 1 0.2 DMC 1 0.2 DMC (DMC)

M(X)n 가 , M Zn(II), Fe(II), Ni(II), Mn(II), Co(II), Sn(II), Pb(II), Fe(III), Mo(IV), Mo(VI), Al(III), V(V), V(IV), Sr(II), W(IV), W(VI), Cu(II) Cr(III) , M Zn(II), Fe(II), Co(II) Ni(II) , X . n 1 - 3 M 가 (II) (II) (II) (II) 가

Y a M<sup>1</sup> (CN)<sub>b</sub> (A<sub>c</sub>) 가 , M<sup>1</sup> Fe(II), Fe(III), Co(II), Co(III), Cr(II), Cr(III), Mn(II), Mn(III), Ir(III), Ni(II), Rh(III), Ru(II), V(IV), V(V) , M<sup>1</sup> C o(II), Co(III), Fe(II), Fe(III), Cr(III), Ir(III) Ni(II) , Y . A , a, b c M<sup>1</sup> (III), (III), (III), (III), (III), (III), (III) US 5,158,922

, US 5,158,922 가 , DMC , US 5,158,922 , 4,843,054 , 3,941,849 , n - , sec - t - t - 가

DMC US 5,158,922 , 4,843,054 , 3,941,849 DMC 4,477,589 , 3,427,335 , 3,427,334 , 3,427,256 , 3,278,457 DMC Kokai 4 - 145123 DMC 1 0.2 DMC 1 1 0.15 , 가 DMC 1 0.1

DMC ,

DMC DMC 1 가 0.2 , 0.5

X- ( 2 3 ).

( 4 ), X

A - 0654302 ).

100 ppm ( 가 )

DMC ( 5 EP - .105 PO

3 g

가 , 105 100 ppm ( ) 3 g

( d - spacing), )

X

가

0.004 meq/g

- A - 0654302 DMC 1995 5 15

08/435,116 EP

DMC : (1)

(2) 가 ) 가 ),

DMC

( 3 3 ).

100 %

( DMC 1 0.5 DMC 1 0.2 ).

( 1 - 2 2 ).

가

DMC 1 0.2 DMC

DMC 1 0.2 , 1 g ( ,

가 가 X 가

가

DMC 가

DMC (US 3,278,457 3,404,109  
(US 5,145,883 3,538,043

3,583 , 5,145,883 , 4,472,560 , 3,941,849 , 3,900,518 , 3,538,043 , US 5,22  
, 3,278,458 , 3,278,457 J.L.Schuchardt S.D.Harper SPI Proceeding, 32nd Annual Polyuret  
hane Tech./Market. Conf. (1989) 360 . DMC

US DMC DMC 가 ,  
가 DMC

25 ppm

0.006 meq/g , 0.007 meq/g 0.005 meq/g

DMC

2 - 6, 가 2 - 3 , 가 2 - 8, 500 - 50,000  
1000 - 12000 , 가 2000 - 8000

[ ]  
1  
Zn<sub>3</sub>[Co(CN)<sub>6</sub>]<sub>2</sub> 1 0.2 ZnCl<sub>2</sub> /t -  
306 % 1 0.2 ,  
(15 ml) 2 (4 g) (75 ml) 3 t - (50 ml) (150 ml) (10 g)  
1 3 , 가 , 20 ( 2 )  
가 40 psi 5 t - ( )  
50 ml) (50 ml) , 20  
t - (70 ml) (30 ml)  
, 50 - 60 , 30 in (Hg) , 20  
pm 가 11.1 g ( 4 105 100 p  
d- ZnCl<sub>2</sub> ) . , X 1.4 %Zn<sub>3</sub>[Co(CN)<sub>6</sub>]<sub>2</sub> 1 0.14  
, ) 6.1, 5.9, 5.1, 4.2, 3.8, 3.6, 2.5 2.3 ( ( 2 ) .  
( 5 ) 0.0043 meq/g  
30 mg KOU/g  
2  
Zn<sub>3</sub>[Co(CN)<sub>6</sub>]<sub>2</sub> 1 0.2 ZnCl<sub>2</sub> /t -  
, 306 % 가 , 1 0.2  
가 , 30 가 , 1  
, 1.2 1  
t - t - / 50 : 50 2 .

10 g  
 pm 가 ).  
 ZnCl<sub>2</sub>)가  
 [d- (d - spacing), ]  
 meq/g 가 31.1 mg KOH/g  
 Zn<sub>3</sub>[Co(CN)<sub>6</sub>]<sub>2</sub> 1 0.2 ZnCl<sub>2</sub>  
 63 % DMC /t -  
 0 g), t - (95 g) (445 g) 가 1 (5.  
 1 가 25 가 (5 g) (5 g)  
 - (68 g) (38 g) 30 psig 가 70 : 30 t  
 - (99.5 % ; 98 g , 125 ml) , 30 t  
 30 45 , 30 in (Hg) 18  
 7 ZnCl<sub>2</sub>) 10.9 g ( 4 105 100 ppm  
 3.8, 3.6, 3.1, 2.5, 2.3 2.1 [d - spacing, ] 0.7 % (1 Zn<sub>3</sub>[Co(CN)<sub>6</sub>]<sub>2</sub> 0.0  
 가 6.1, 5.9, 5.1, 4.2, 가  
 4  
 1 : ----- ( 700), (70 g) ( 105  
 0.057 g, 가 100 ppm ) 가 30 in(H  
 g) 가 (accelerated pressure) 가 가, 가  
 가 (490 g) 가 105  
 10 psig 가 , 105  
 PO 가 (g) ( ) ( 1 ). PO (g)  
 가 가 ( )  
 100 ppm , US 5,158,922 10 g PO ( 1 105 ).  
 2 g PO 105 100 ppm  
 5  
 2 ( 700), (685 g) (1.  
 63 g) 105 가  
 30 in (Hg) 가 (102 g)  
 가 가 (accelerated pressure)  
 가 가 가  
 가 40 psi 가 ( 5713 g ) 가  
 가 40 psi 2 2 가  
 105 가  
 100 (0.45 - 1.2 )

DMC 가 DMC DMC , 가 ,  
 25 ppm  
 0.006 meq/g , 0.007 meq/g  
 DMC 0.005 meq/g  
 2 - 6, 가 2 - 3 , 가 2 - 8,  
 1000 - 12000 , 가 2000 - 8000 500 - 50,000

(57)

1. (DOUBLE METAL CYANIDE ; DMC) , 1 0.1 DMC ,  
 가 2. DMC , DMC
- 1 DMC 3. 1 2 , 가 t - DMC .
- 1 4. 2 , X 6.1, 5.9, 5.1, 4.2, 3.8, 3.6, 2.5  
 2.3 (d - spacing , ) DMC
- 1 5. 2 , 2 DMC X X
- 1 6. 2 , 100 ppm DMC 105  
 3 g
- 1 7. 2 , 가 0.005 meq/g
8. , 1
- 0.1 DMC 100 % , 가 DMC 1
9. (a) , (b) , DMC 1 0.1 ;
10. , 1 DMC 8 9 , DMC 가 DMC
11. 8 9 , 가 t - DMC
12. 8 9 , X 6.1, 5.9, 5.1, 4.2, 3.8, 3.6, 2.5  
 2.3 (d - spacing , ) DMC
- 13.

1

2

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