

(19) (KR)
(12) (B1)

(51) 。 Int. Cl.⁷
C11D 3/39

(45)
(11)
(24)

2003 07 12
10-0382435
2003 04 18

(21) 10-1995-0021262
(22) 1995 07 20

(65)
(43)

1996-0004650
1996 02 23

(30) 9425322.6 1994 12 15 (GB)
9414690.9 1994 07 21 (GB)

(73) -4057 141

(72) - 68220 9

68400 16

79400 10

(74)

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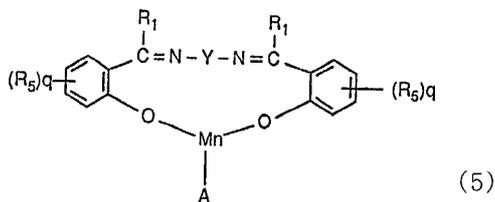
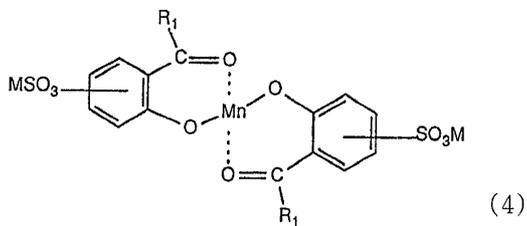
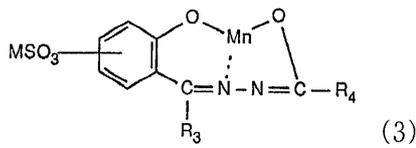
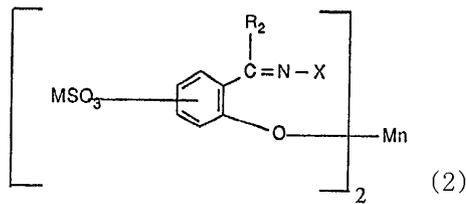
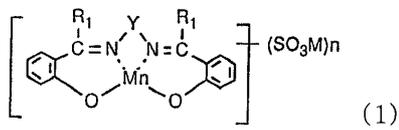
(54) /

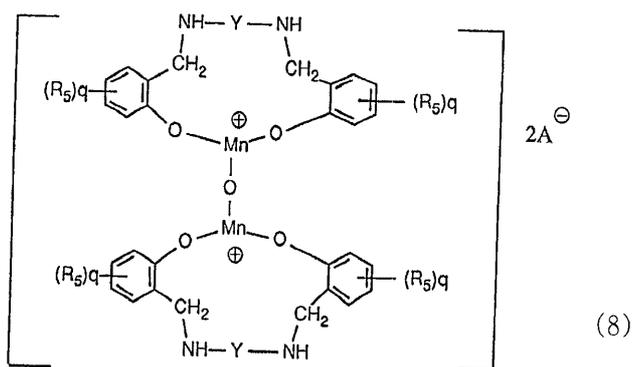
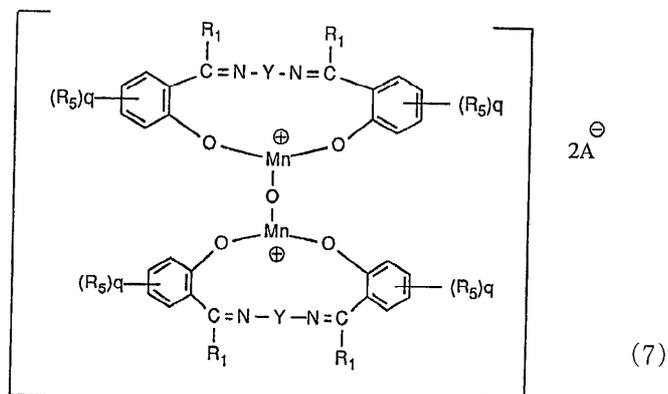
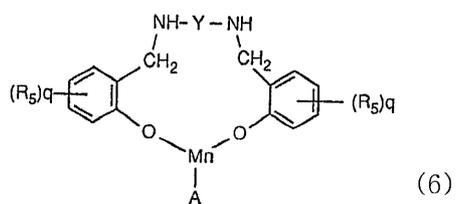
(peroxygen compound) ,

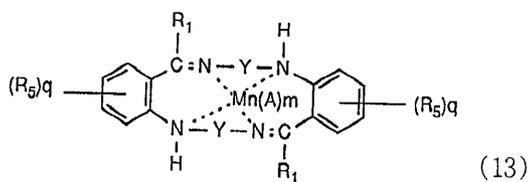
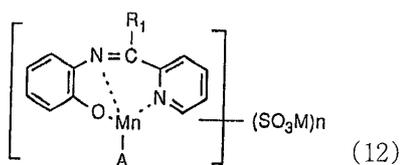
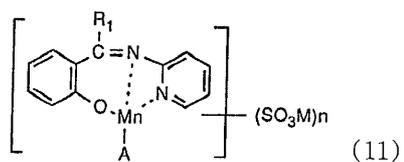
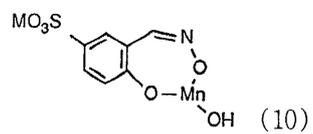
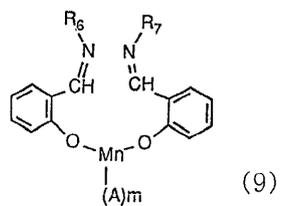
60
 5 114 611 (Mn, Co, Fe Cu) -() 가
 2,2- 2,2-
 5 114 606 3 C-OH
 (II), (III) (IV)

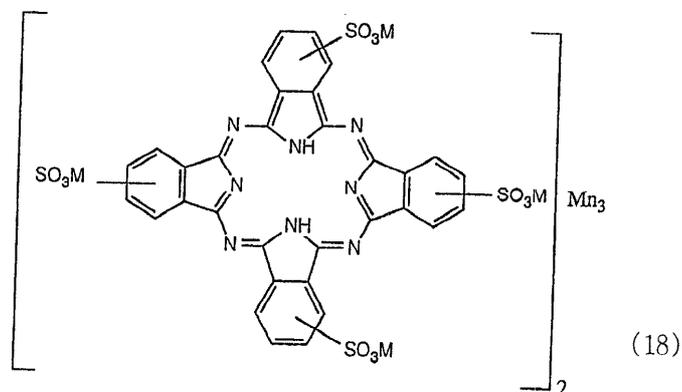
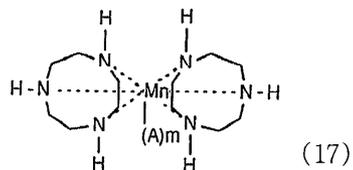
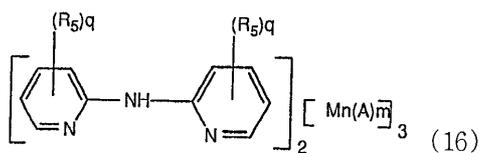
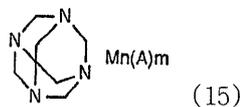
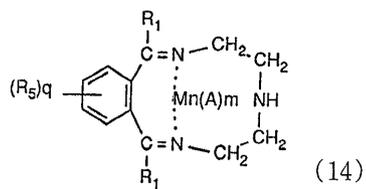
5 227 084 , 5 194 416 , 4 728 455 , 4 478 7
 33 , 4 430 243 , 549 271 , 549 272 ,
 544 519 , 544 490 , 544 440 , 509 78
 7 , 458 397 , 458 398 .
 (: 15 40) /

(a) (b) 0.0005 0.5 % , 0.005
 0.05 % (1) (18)









R_1, R_2, R_3, R_4 ,
 R_5 ,
 $(R_5)_q$,
 R_6, R_7 ,
 Y ,
 X OH, NH₂,
 n 0, 1, 2, 3,
 m ,
 m 2, 3,
 q 0, 1, 2, 3,
 A ,
 R_1, R_2, R_3, R_4, R_5 X,
 C_1-C_4 ,
 SO_3M ,
 $NH-CO-NH_2$,
 N ,
 $()_2, N^+$,
 SO_3M ,
 $NH-CO-NH_2$,
 C_1-C_{12}

; -C₁-C₄- ; C₁-C₄- ; C₁-C₄-
R₅ C₁-C₈- C₁-C₄- C₁
-C₄- ; C₁-C₄- ; -

N(R₅)₂ R₅ N(C₁-C₄)₂ N()₂
N()₂ N[⊕]()₃ R₅ N[⊕](C₁-C₄-)₃ N[⊕]()₃ N[⊕]()
R₁, R₂, R₃ R₄ C₁-C₄- C₁-C₄-

R₁, R₂, R₃, R₄ X C₁-C₄- (:
, 2, 3), C₁-C₄- (: , C₂-C₃-
5 - (: ,),

Y가 C₂-C₄- -CH₂-CH₂- 가 Y
C₂-C₈- -(CH₂)₃-NH-(CH₂)₃-, -(CH₂)₂-NH-(CH₂)₂-
-(CH₂)₂-N(CH₃)-(CH₂)₂-
A , BF₄, PF₆,

(1) R₁ , Y , n 2 ,

(2) R₂ , X OH
(3) R₃ , R₄가 ,

(4) SO₃ M R₁ , SO₃ M

(5), (6), (7) (8) R₁ , q 1 , R₅ , A
SO₃ Na , p- , Y -CH₂CH₂- , A
PF₆

(9) R₆ R₇ , ,

(11) (12) R₁ , n 0 , A

(13) R₁ , m 2 3 , A

(14) R₁ , m 2 , A가 Cl

(15) m 2 , A가

(16) m 2 , A

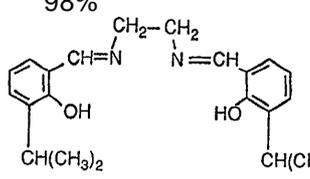
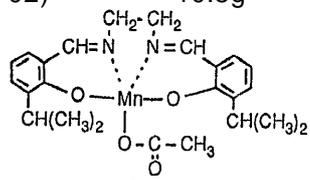
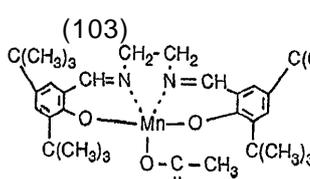
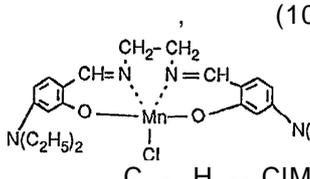
(17) , A

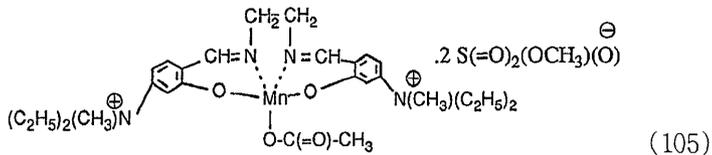
(1) (18) , , M , M

(1) (4), (9), (10), (11), (12), (13), (14) (18)
가 , C₁-C₄- , C₁-C₄- ,

q가 2, 3 4 (5) (6), (7), (8) (11) (17)
가 (5) (18)
WO 93/03838 (5), (6) (10) (18)
, 4,655,785
(7) (8) (5) (6)
(a) , ,

(:) (:
, 1,12- ,

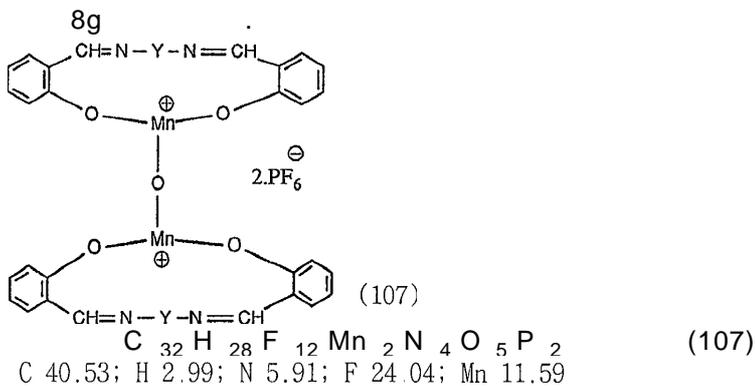
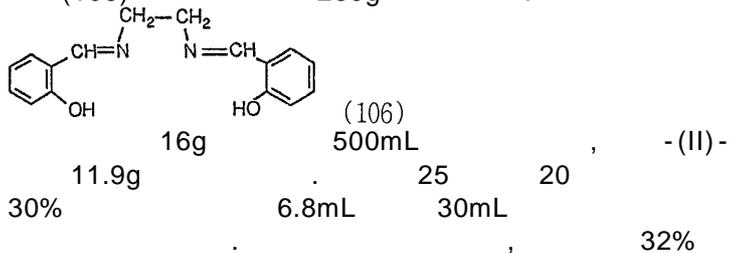
		가		(a)		(b)	
		(bath)	0.001	100ppm,	0.01	20ppm	
					%	%	
<u>1</u>		6g	60	1	500mL	3-	34.5g
가	60	가	2	(101)	34.5g		
98%							
	(101)						
350mL		10.6g	65	3	(II)-	4H ₂ O 7.4g	가
						75%	(1
02)	10.5g						
	(102)						
		C ₂₄ H ₂₉ MnN ₂ O ₄	· 0.8	3-	(102)		:
이론치%		C 64.47; H 6.48; N 4.70; Mn 9.23					
실측치%		C 64.5; H 6.7; N 5.0; Mn 9.46					
<u>2</u>							
(103)		91%					
	(103)						
		C ₃₄ H ₄₉ MnN ₂ O ₄	· 1.0	(103)			
		C 65.05; H 7.97; N 4.21, Mn 8.27.					
		C 64.3; H 8.1; N 4.2, Mn 8.44					
<u>3</u>							
(104)		63%					
	(104)						
		C ₂₄ H ₃₂ ClMnN ₄ O ₂	· 0.75H ₂ O	(104)			
이론치%		C 56.41; H 6.55; N 10.96, Cl 6.94; Mn 10.76.					
실측치%		C 56.5; H 6.6; N 10.9; Cl 6.8; Mn 9.9.					
<u>4</u>							
(105)		61%					



이론치%: C 43.90; H 6.34; N 6.83; S 7.80; Mn 6.70.

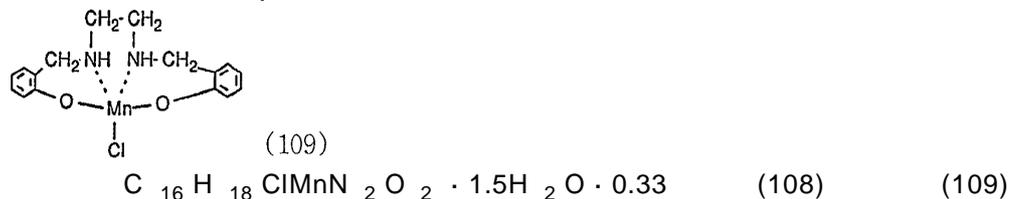
실측치%: C 44.20; H 6.7; N 6.6; S 7.1; Mn 5.71

5
60g 60 1 500mL 277g 가 .60
가 2 97%
(106) 260g :



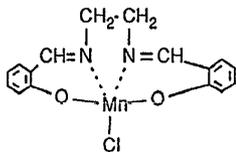
C 40.8; H 3.3; N 6.0; F 22.3; Mn 11.1.

6
5 (106) , 25 5% Pd
/C (108) 86% :



실측치%: C 53.1; H 5.6, N 7.4, Cl 7.8; Mn 11.7.

7
1 , (110) :

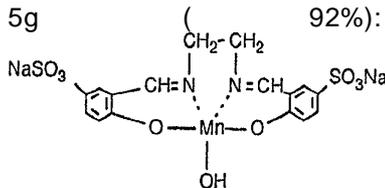


(110)

$C_{16}H_{14}ClMnN_2O_2 \cdot 1.92H_2O$ (110) :
 이론치: C 49.11; H 4.60; N 7.16; Cl 9.06; Mn 14.04.

C 49.4, H 4.6; N 7.1, Cl 8.9; Mn 13.9

$\frac{8}{5}$, 450mL (106) 26.8g - (II) - 4
 H₂O 24.5g 30% 가 26.2g 가 . 70 2
 , 5 (111) 2

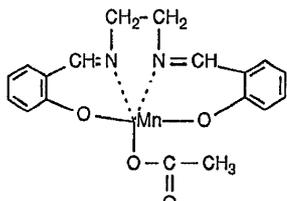


(111)

$C_{16}H_{13}MnN_2Na_2O_9S_2 \cdot 1.0H_2O$ (111) :
 이론치: C 34.2, H 3.03; N 5.0; Mn 9.8

실측치: C 34.2, H 3.3; N 5.6; Mn 9.3

$\frac{9}{1}$ (112) :

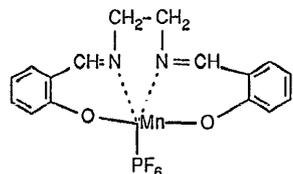


(112)

$C_{18}H_{17}MnN_2O_4$ (112) :
 이론치: C 56.8; H 4.5; N 7.4, Mn 14.5.

실측치: C 56.7; H 4.6; N 7.3; Mn 14.6.

$\frac{10}{1}$ (113) :

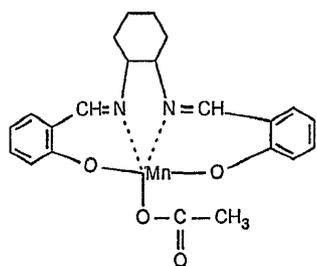


(113)

$C_{16}H_{14}F_6MnN_2O_2P \cdot 2.12H_2O$ (113) :
 이론치: C 38.1; H 3.6; N 5.6; H₂O 7.6; Mn 10.9.

실측치: C 38.5; H 3.5; N 5.7; H₂O 7.6; Mn 11.0.

$\frac{11}{1}$ (114) :



(114)



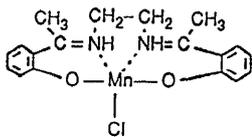
이론치%: C 56.4; H 5.8; N 6.0; H₂O 7.3; Mn 11.7

실측치%: C 56.2; H 5.8; N 5.9; H₂O 7.3; Mn 11.5.

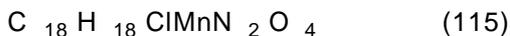
12

1

(115)



(115)



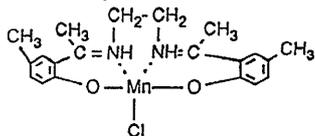
이론치%: C 56.2; H 4.7; N 7.3; Mn 17.3.

실측치%: C 56.3; H 4.6; N 7.1; Mn 17.1.

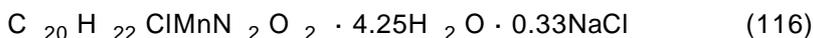
13

1

(116)



(116)



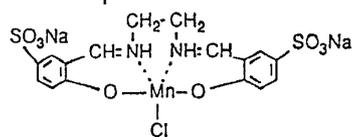
이론치%: C 49.1; H 5.8; N 5.72; Cl 9.65; Mn 11.23

실측치%: C 49.1; H 5.9; N 5.6; Cl 9.8; Mn 10.8.

14

1

(117)



(117)



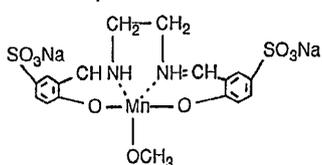
이론치%: C 28.0; H 2.6; N 4.1; Mn 8.0; S 9.3.

실측치%: C 28.0; H 2.6; N 4.1; Mn 7.8; S 9.1

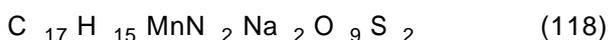
15

1

(118)



(118)



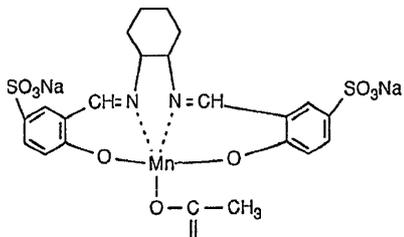
이론치%: C 34.0; H 2.7; N 5.0; Mn 9.9; S 11.5.

실측치%: C 34.8; H 3.3; N 5.0; Mn 10.1; S 11.2.

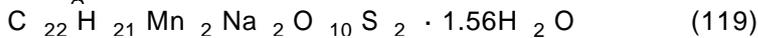
16

1

(119)



(119)



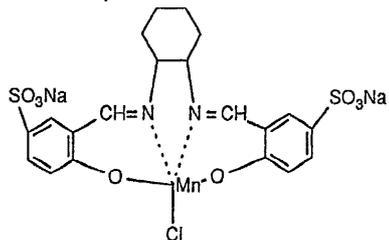
이론치%: C 39.6; H 3.6, N 4.2; Mn 8.2; S 9.6.

실측치%: C 39.6; H 4.2, N 4.9; Mn 8.7; S 9.6

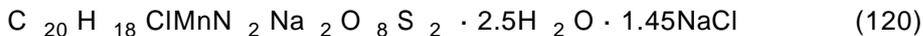
17

1

(120)



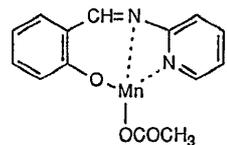
(120)



이론치%: C 32.2; H 3.1; N 3.8; Mn 7.4.

실측치%: C 32.2; H 3.1; N 3.8; Mn 7.2.

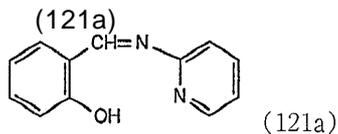
18



(121)

A) 300mL 2- 18.8g

24.4g 가 . 70



(121a)

25.5g (65%).



이론치%: C 72.71, H 5.08; N 14.13.

실측치%: C 72.6; H 5.1; N 14.1.

B) 200mL (A) 8.5g 가 .

(121a) 5.9g - (III) -

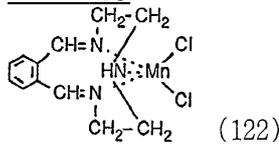
(121) 60 65 5 6.3g(68%)



이론치%: C 49.48; H 4.38; N 7.22; Mn 14.17.

실측치%: C 50.18; H 4.45; N 7.40; Mn 14.4.

19



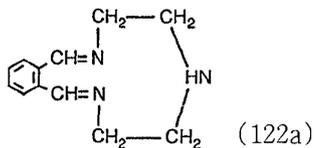
(122)

A) 1000mL 20 40g(100%)

26.8g

21.5mL 가 , (112a)

25



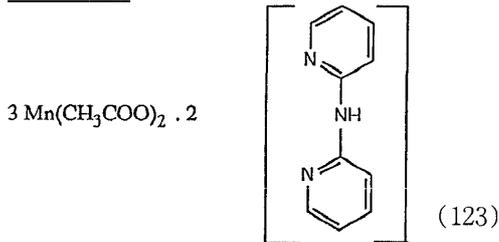
B) 20.1g 250mL 가 , 19.8g 250mL (122a) (II)- 25 18 28g(85%) (122)



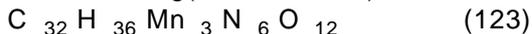
이론치%. C 37.81, H 5.55; N 11.02; Cl 18.60; Mn 14.41.

실측치%. C 38.0; H 5.0; N 10.5; Cl 19; Mn 15.4.

20



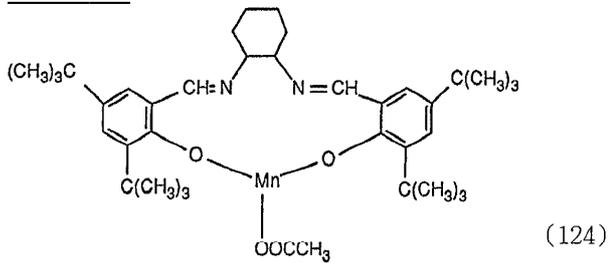
50mL 2,2' - 5.1g (II)- 7.4g 가 , (1 25 18 6.6g(58%) , 25



이론치%. C 44.62, H 4.21; N 9.76; Mn 19.13.

실측치%. C 44.70; H 4.15; N 9.72; Mn 19.8.

21

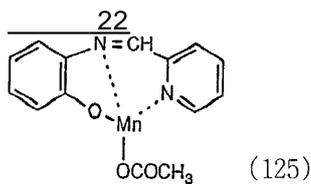


1,2- (3,5- -3 -) 8.2g 400mL 가 , 65 가 , 15 (II)- 2.7g 가 , 9.5g(92.8%) (124) (124)

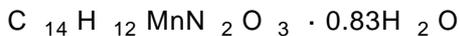


이론치%. C 66.85; H 8.43; N 4.10; Mn 8.05.

실측치%. C 66.98; H 8.53; N 4.00; Mn 7.82.



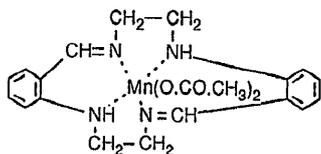
o- 10.9g (II)- 10.7g 60 65 5 200mL 24.5g 60 65 5 31g(95%) (125) (125)



C 51.58; H 4.22; N 8.59; Mn 16.87.

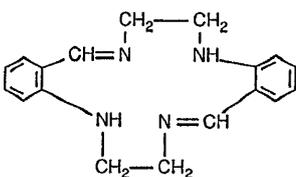
C 51.76; H 3.91; N 8.11; Mn 16.80.

23



(126)

A) 1000mL 405mL 20mL 63.4g 가 100
 가 , 2 115mL o- 111mL 가 .
 100 4 , 75 ,
 mL (phase) , 100mL 200
 25 48 , 40
 (126a) 24g(16%)



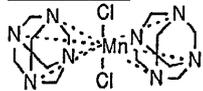
(126a)

B) (A) (126a) 5.8g -(II)- 5g 200mL
 12 , , 7.5g

$C_{22}H_{26}MnN_4O_4 \cdot 0.14MnO_2$ (126) :
 이론치%: C 55.30; H 5.48; N 11.72; Mn 13.12.

실측치%: C 55.34; H 5.55; N 11.80; Mn 12.70.

24



(127)

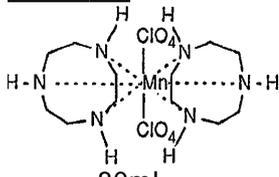
200mL -(II)- 19.8g 14g 가 .25 20
 , 25 (127) 18.5g(
 91%)

$C_{12}H_{24}Cl_2MnN_4 \cdot 2H_2O$ (127) :

C 32.59; H 6.38; N 25.34; Cl 16.03; Mn 12.42.

C 32.2; H 6.5; N 24.8; Cl 16.2; Mn 12.4.

25



(128)

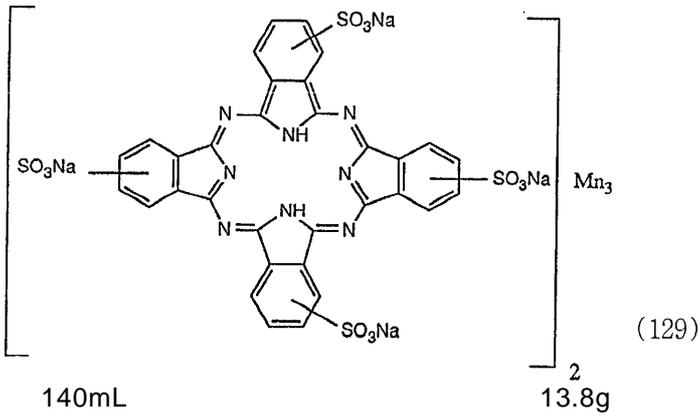
80mL .30 , 3.0g 2g 가 .
 , 25 1g 가 , 25 24
 (128) 1.8g(65%)

$C_{12}H_{30}Cl_2MnN_6O_8$ (128) :

C 28.12; H 5.86; N 16.41; Cl 13.87; Mn 10.74

실측치%: C 28.1; H 6.2; N 16.3; Cl 13.6; Mn 11.0

26



140mL
70 75 가 12
, 5
(129)
C₆₄H₄₀Mn₃N₁₆O₂₄S₈ · 2.2H₂O
C 31.78; H 3.50; N 9.27; S 10.61; Mn 6.81.

Mn₃
13.8g
-(III)-
20g 가 , 4.2g 가
200mL , 40 가
20%
3.5g((129)
:

C 32.1; H 3.2; N 9.4; S 10.7; Mn 6.79.

27

(ECE)
8.0% (C_{11.5})
2.9% - - (14mol EO);
3.5% ;
43.8% ;
7.5% ;
1.9% ;
1.2% ;
0.2% EDTA;
21.2%
9.8%

, ECE 7.5g/L, 1.13g/L 8 (111)
0.015g/L
(12) 400mL
12.5g 37.5g (, 40 1:8).
가 10 15 25 , 40 60 10 가

(brightness value)(Y) SF 500 . Y

. 1Y
Y 25 [, 109]

일록 유형	ΔY					
	15% 과불산염			15% 과불산염 + 0.2% 화합물(111)		
	25°C.	40°C.	60°C.	25°C.	40°C.	60°C.
적색 와인	Y= 64	+1	+3	+4	+6	+14
차	Y= 65	0	+5	+4	+10	+22
커피	Y= 72	+1	+5	+4	+6	+14
흑발기	Y= 60	+2	+7	+7	+10	+23

(111) (110), (112), (114), (117), (118), (119), (120), (121), (122), (123), (124), (125),
 (126), (128) (129)

(57)

1.

(a) (b) 0.0005 0.5 % (5) (8), (11) (15), (17) (18)

