

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

(51) 。 Int. Cl.<sup>7</sup>  
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)

:

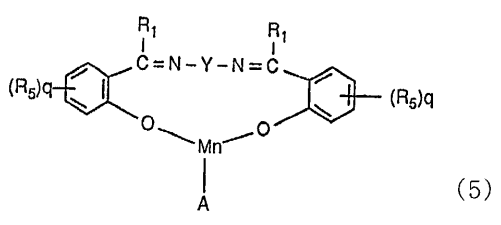
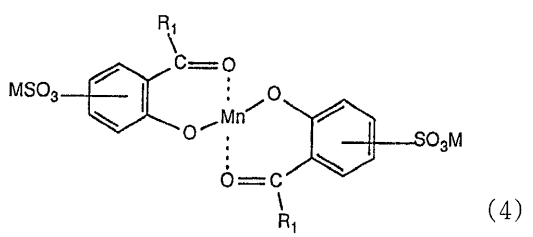
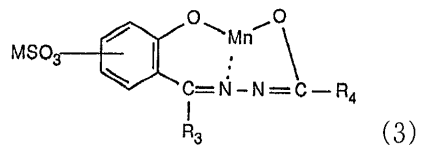
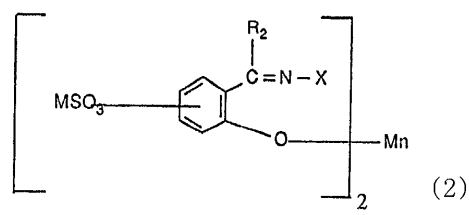
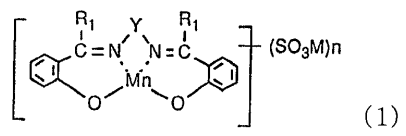
(54) /

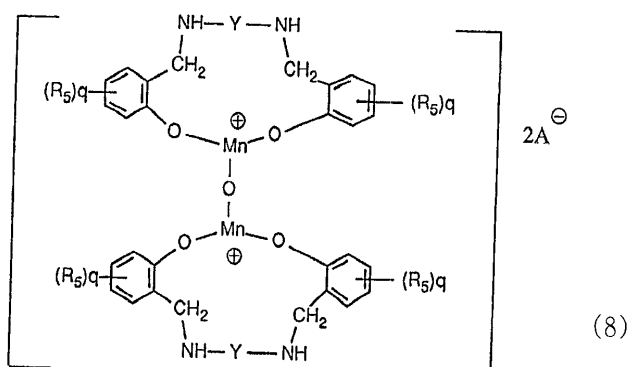
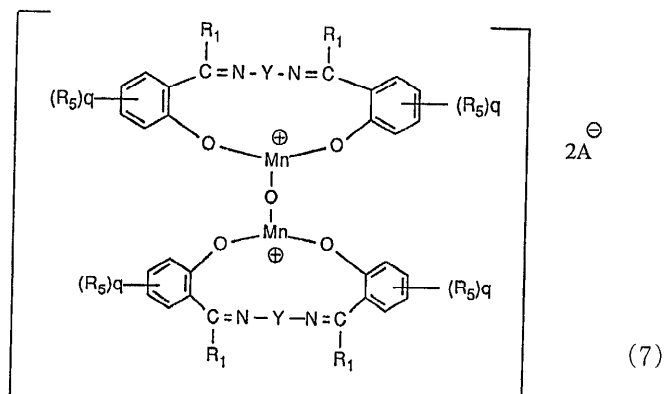
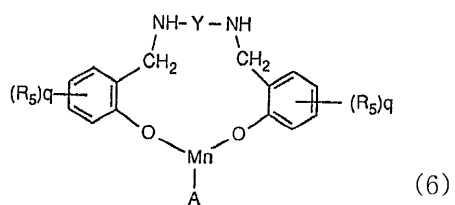
(peroxygen compound) ,

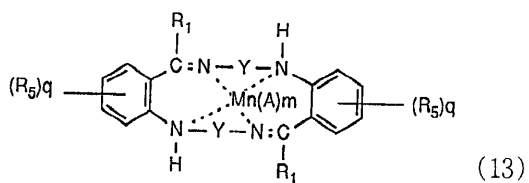
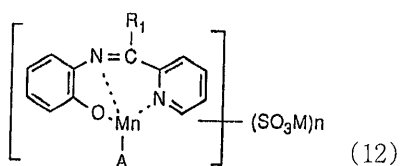
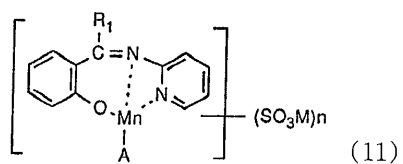
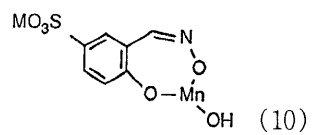
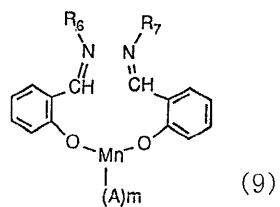
60  
 5 114 611 (Mn, Co, Fe Cu) -( ) 가  
 2,2- 2,2-  
 5 114 606 3 C-OH  
 (II), (III) (IV)

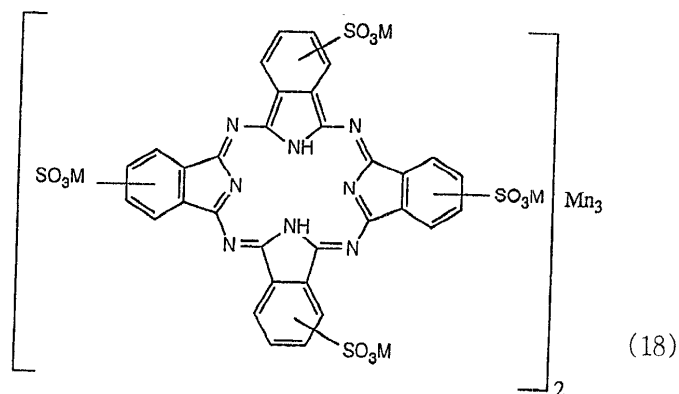
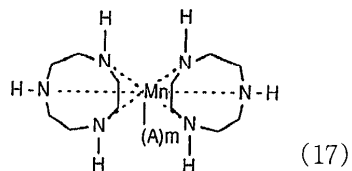
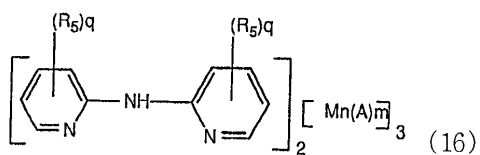
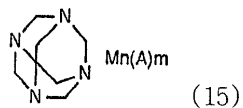
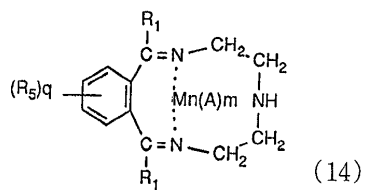
5 227 084 , 5 194 416 , 4 728 455 , 4 478 7  
 33 , 4 430 243 , 549 271 , 549 272 ,  
 544 519 , 544 490 , 544 440 , 509 78  
 7 , 458 397 , 458 398 .  
 ( : 15 40 ) /

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









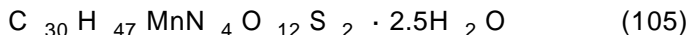
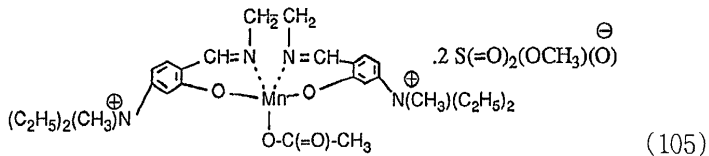
$R_1, R_2, R_3, R_4$ ,  
 $R_5$ ,  
 $(R_5)_q$ ,  
 $R_6, R_7$ ,  
 $Y$ ,  
 $X$  OH, NH<sub>2</sub>,  
 $n$  0, 1, 2, 3,  
 $m$ ,  
 $m$  2, 3,  
 $q$  0, 1, 2, 3,  
 $A$ ,  
 $R_1, R_2, R_3, R_4, R_5$  X,  
 $C_1-C_4$ ,  
 $SO_3M$ ,  
 $NH-CO-NH_2$ ,  
 $N$ ,  
 $( )_2, N^+$ ,  
 $SO_3M$ ,  
 $NH-CO-NH_2$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





		가		(a)		(b)	
		(bath)	0.001	100ppm,	0.01	20ppm	
					%	%	
1	6g	60	1	500mL	3-		34.5g
가	60		가	34.5g			
98%		(101)	2				
	350mL	(101)	3	10.6g	(II)-	4H <sub>2</sub> O 7.4g	가
	65					75%	(1
02)	10.5g						
		(102)					
		C <sub>24</sub> H <sub>29</sub> MnN <sub>2</sub> O <sub>4</sub> · 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					
2					1		
(103)		91%					
		(103)					
		C <sub>34</sub> H <sub>49</sub> MnN <sub>2</sub> O <sub>4</sub> · 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					
3						1	
(104)		63%					
		(104)					
		C <sub>24</sub> H <sub>32</sub> ClMnN <sub>4</sub> O <sub>2</sub> · 0.75H <sub>2</sub> 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.					
4					1		
(105)		61%					

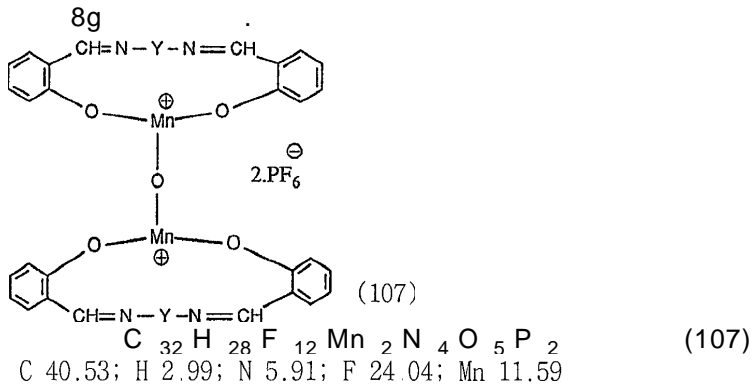
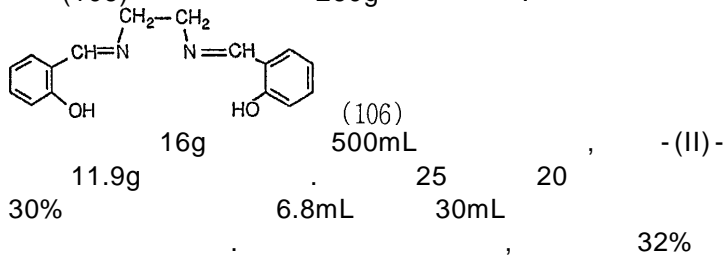




이론치%: C 43.90; H 6.34; N 6.83; S 7.80; Mn 6.70.

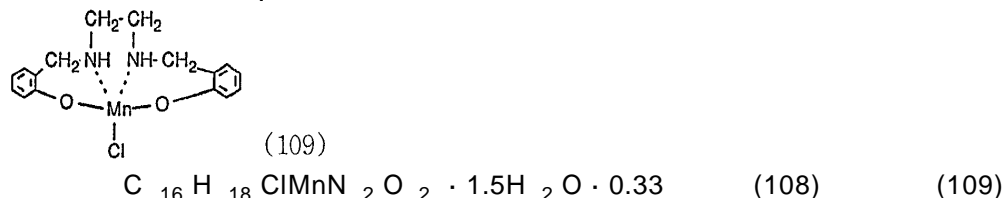
실측치%: C 44.20; H 6.7; N 6.6; S 7.1; Mn 5.71

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.

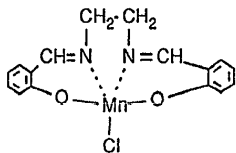
6  
5 (106) , 25 5% Pd  
/C (108) 86% :



이론치%: C 53.53; H 5.16; N 7.81; Cl 7.43; Mn 11.53.

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

7  
1 (110) :

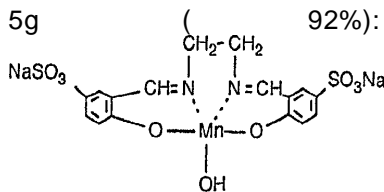


(110)

$C_{16}H_{14}ClMnN_2O_2 \cdot 1.92H_2O$  (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  
 H<sub>2</sub>O 24.5g 30% 가 26.2g 가 . 70 2  
 , 5 (111) 2

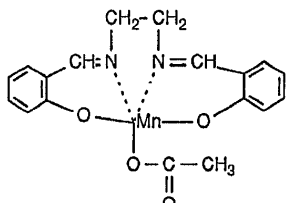


(111)

$C_{16}H_{13}MnN_2Na_2O_9S_2 \cdot 1.0H_2O$  (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) :

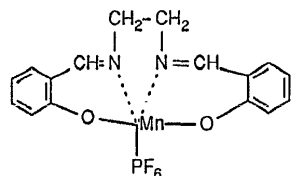


(112)

$C_{18}H_{17}MnN_2O_4$  (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) :

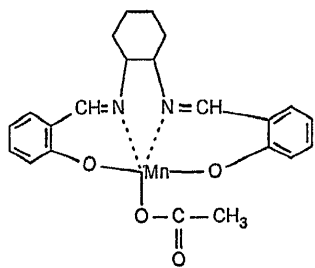


(113)

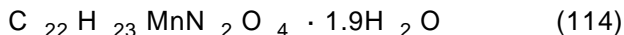
$C_{16}H_{14}F_6MnN_2O_2P \cdot 2.12H_2O$  (113) :  
 이론치: C 38.1; H 3.6; N 5.6; H<sub>2</sub>O 7.6; Mn 10.9.

실측치: C 38.5; H 3.5; N 5.7; H<sub>2</sub>O 7.6; Mn 11.0.

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



(114)



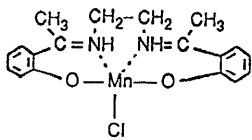
이론치%: C 56.4; H 5.8; N 6.0; H<sub>2</sub>O 7.3; Mn 11.7

실측치%: C 56.2; H 5.8; N 5.9; H<sub>2</sub>O 7.3; Mn 11.5.

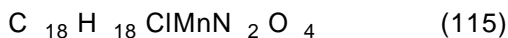
12

1

(115)



(115)



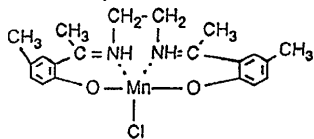
이론치%: C 56.2; H 4.7; N 7.3; Mn 17.3.

실측치%: C 56.3; H 4.6; N 7.1; Mn 17.1.

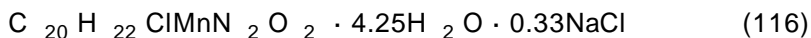
13

1

(116)



(116)



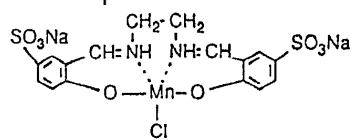
이론치%: C 49.1; H 5.8; N 5.72; Cl 9.65; Mn 11.23

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

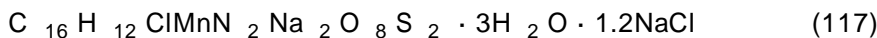
14

1

(117)



(117)



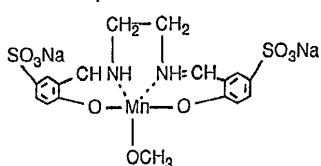
이론치%: C 28.0; H 2.6; N 4.1; Mn 8.0; S 9.3.

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

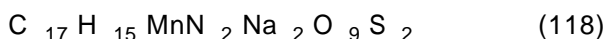
15

1

(118)



(118)



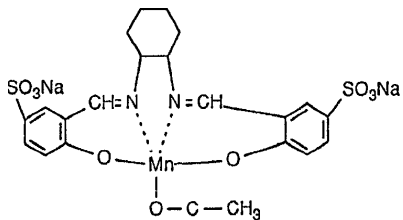
이론치%: C 34.0; H 2.7; N 5.0; Mn 9.9; S 11.5.

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

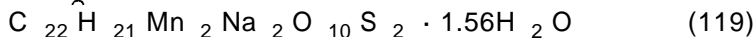
16

1

(119)



(119)



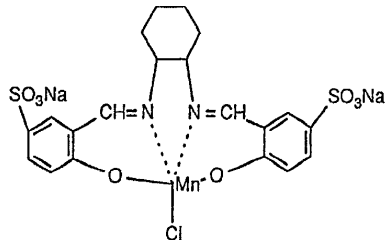
이론치%: C 39.6; H 3.6, N 4.2; Mn 8.2; S 9.6.

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

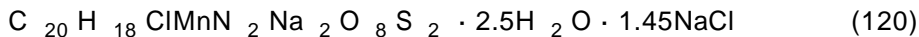
17

1

(120)



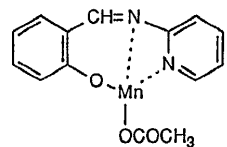
(120)



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

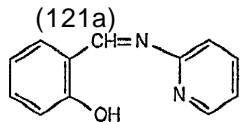


(121)

A) 300mL 2- 18.8g  
75 가 , 7 .

24.4g 가 . 70  
, 5 ,

1/3



(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) 5.9g  
8.5g 가 . 60 65

(121a)

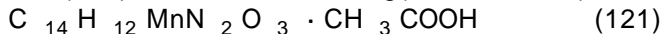
5.9g

-(III)-

(121)

6.3g(

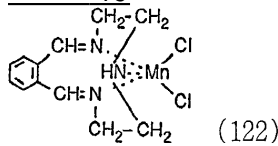
68%)



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.

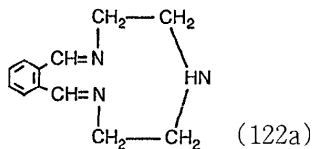
19



(122)

A) 1000mL 26.8g  
20 . 40g( 100%) :

21.5mL 가 , 25  
(112a)



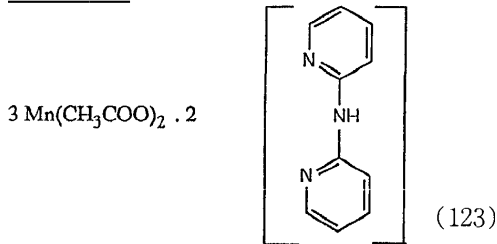
B) 20.1g 250mL 가 , 19.8g 250mL (122a)  
 , , 25 , 18 , 28g( 85%)  
 , , 25 (122)



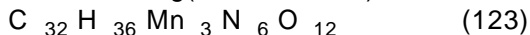
이론치%. C 37.81, H 5.55; N 11.02; Cl 18.60; Mn 14.41.

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

20



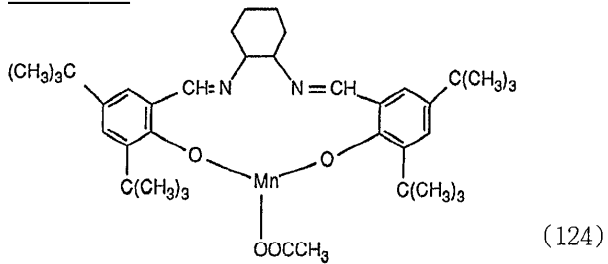
50mL 2,2'- 5.1g - (II) - 7.4g 가 , (1  
 25 18 , 25 ,  
 23) 6.6g( 58%)



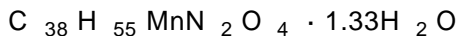
이론치%. C 44.62, H 4.21; N 9.76; Mn 19.13.

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

21

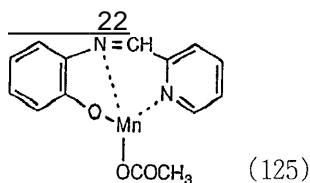


1,2- (3,5- -3 - ) 8.2g 400mL 가 , 65  
 가 , 15 , 2.7g 가 ,  
 , 15 , (124) 9.5g( 92.8%)  
 , (124) :

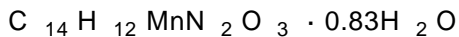


이론치%. C 66.85; H 8.43; N 4.10; Mn 8.05.

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



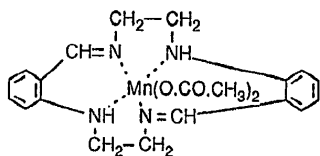
o- 10.9g -2- 10.7g 60 65 5 200mL  
 , , 24.5g 60 65 5  
 , (125) 31g( 95%)  
 , (125) :



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

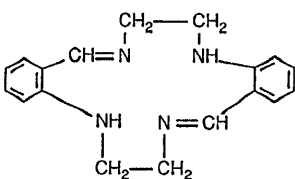
C 51.76; H 3.91; N 8.11; Mn 16.80.

23



(126)

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



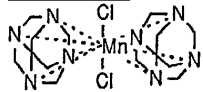
(126a)

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)

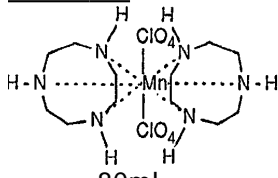
200mL -(II)- 19.8g 14g 가 .25 20  
 , 25 (127) 18.5g(

$C_{12}H_{24}Cl_2MnN \cdot 2H_2O$  (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)

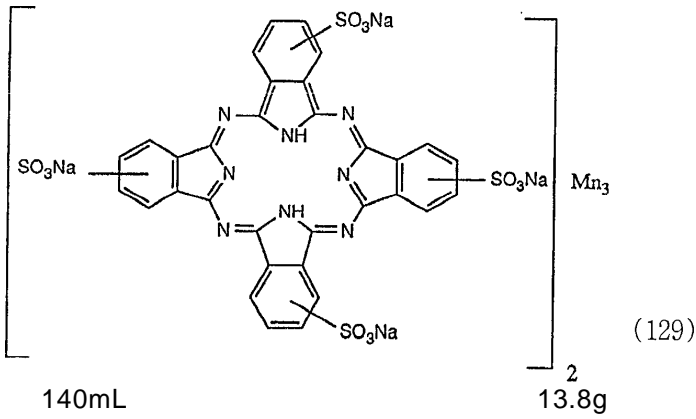
80mL .30 , 3.0g 2g 가 .  
 , 25 1g 가 , 25 24  
 (128) 1.8g( 65%)

$C_{12}H_{30}Cl_2MnN_6O_8$  (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)  
C<sub>64</sub>H<sub>40</sub>Mn<sub>3</sub>N<sub>16</sub>O<sub>24</sub>S<sub>8</sub> · 2.2H<sub>2</sub>O  
C 31.78; H 3.50; N 9.27; S 10.61; Mn 6.81.

Mn<sub>3</sub>  
- (III) -  
20g 가 , 4.2g 가  
200mL , 40 가  
3.5g( 20%)  
(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)

