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C09B 62/012(11)
(43)2001 - 0095243
2001 11 03(21) 10 - 2001 - 0017541
(22) 2001 04 03(30) 10016665.2 2000 04 04 (DE)
10025303.2 2000 05 22 (DE)

(71)

- 51368

(72) ,
- 51375 - - - 19
,
- 51373 67
,
- 51381 27
,
- 41541 13
,
- 51377 18
,
-
- 41542 6

(74)

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(54)

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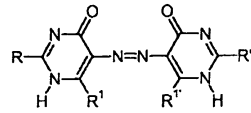
Li, Cs, Mg, Cd, Co, Al, Cr, Sn, Pb,

Na, K, Ca, Sr, Ba, Zn, Fe, Ni, Cu, Mn L

a -, -, -)

.

< 1 >



,
 R R' OH, NH₂, NH - CN,
 R¹ R^{1'} - OH - NH₂ .

,
 .
 , 가 , 가 , 가
 , (,) (" " , " "), ,
 , (" ") (" ")
 가 .
 ,
 . " " 10 - 22392
 (1998) .

, UV -
 , ,
 가 가 . (,)
 , UV - ,
 , 3 3 .

가 ,
LCD 가 .
10 - 22392 ((Toray), 1998), 10 -
19183 ((Hitachi), 1998; Specific Pigment Colour Index Pigment Yellow 150) 10 - 19184
(, 1998) .

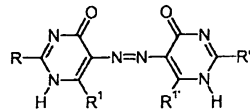
가 , 가

73463

가

1 , 1
1 (, 1
Li, Cs, Mg, Cd, Co, Al, Cr, Sn, Pb, Na, K, Ca, Sr, Ba, Zn, Fe, Ni, Cu, Mn L
a -, -, -) .

1



R R' OH, NH₂, NH - CN,

R¹ R¹' - OH - NH₂ .

1 F, Cl, Br , - OH, C₁ - C₆ - , C₁ - C₆ - , - NH₂, -
NO₂ - CN .

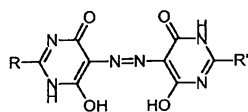
1 (C₁ - C₆ -) , , C₁ - C₆ - , C₁ - C₆ -
-, - , C₁ - C₆ - , C₁ - C₆ - ,
C₁ - C₆ - -, - (,
Cl, Br F, - OH, - CN, - NH₂ () C₁ - C₆ - 가 ,
, F, Cl Br, - OH, C₁ - C₆ - , C₁ - C₆ - , - NH₂, - NO₂ () - CN
) .

() 2 , 1 1

가

(, 1 , 2 1) ,

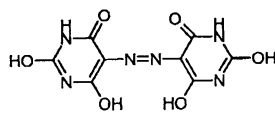
2



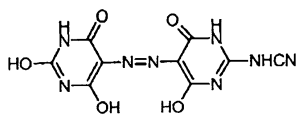
, R R' OH NHCN

, 2 2a , 2c) (,

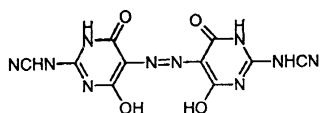
2a



2b



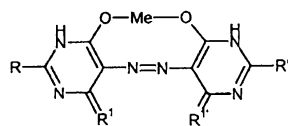
2c



1, 2a 1 2

1 1a 1:1

1a



,
Me
R R'
R' R' =O =NH
2가 4가 1, 1a, 2a, 2b, 2c
- 1:1 2a 1
()
가
- 1
가
(
25 , 1 bar)
100 , 150
OH, COOH, NH₂, NH₂, CONH₂, CONH₂, SO₂NH₂, SO₂NH
2, SO₃H, , NO₂, CN, -SO₂- , -SO₂- , -O- , -O- , -O-
가
, F, Cl, Br, -OH, C₁-C₆- , C₁-C₆- , -NH₂, -NO₂ () -CN
C₁-C₆- , , , -OH, -CN, -NH₂ () C₁-C₆-
CN NH₂ C₁-C₆- , C₁-C₆- , Cl, Br, F, C₁-C₆- , -OH, -
C₃-C₇- , C₅-C₆-
NO₂ () -CN 가 F, Cl, Br, -OH, C₁-C₆- , C₁-C₆- , -NH₂, -
- C₁-C₄-

(C₁-C₆-) - , C₁-C₆- , C₁-C₆- , C₁-C₆- ,
- , C₁-C₆- , C₁-C₆- , Cl,
Br, F, -OH, -CN, -NH₂, C₁-C₆- ,
F, Cl, Br, -OH, C₁-C₆- , C₁-C₆- , -NH₂, -NO₂ () -CN .

가

; C₁₀ - C₃₀ - , 1 - , 1 - , 1 - , 1 - ;

, 1,12 - ;

, ; C₁₀ - C₂₀ - ;

, ;

, ;

, o -, m -, p - , , , 1 -

, 2 - , , , m -, p - , o - ,

p- , 1 - , 2 - , 1 - ;

, 4,4' - - 2 - () ; , 3 -

, 1 - , , 2 -

, 3 - , 4 - , 4 - ; , 2,5 -

, 3 - - , 4 - , 2,4 - , 1 - 2 - , 5 - - 1 -

5 - - 2 - , - sec - , - 4 - , 1,4 - , 1,5 - , 2,6 - , 2,7

- , 3 - - 1,5 - , 1 - , 2 - , 4,4' -

, 1,3,6 - , , , ;

, - , 2 -, 3 - 4 - - , 2 -, 3 - 4 - , 4 -

- , 3,3' - - , 4,4' - - , 1 - 2 - -

가 .

(

,

,),

, 5 - , 2,3 - , 2,3 - - 6 - ,

- 3,6 - , 2 - , 2,4 - , 6 - - 1,3,5

- 2,4 - , 6 - - 1,3,5 - 2,4 - , .

가, [K. Lindner, Tenside - Textilhilfsmittel - Waschrohstoffe, 2, 1, Wissenschaftliche Verlagsgesellschaft mbH, Stuttgart, 1964]

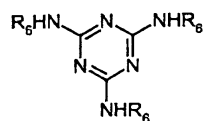
가, 1, 2, (가), 1, 2, 4, 4, -OCH₂-N-, -CO-NH-CH₂-N-가. 가.

가, 가, 1,000, 1,000, 10,000 g/, (), M_n, 10,000 g/, 1,000, 가.

가, 1,000, 1,000, 10,000 g/, (), Mn, 1,000, 1,000, 10,000 g/, 가.

3 가.

3



, R₆, OH, C₁ - C₄ - ,

R₆

가 5 200
% . 10 100 % 가
가
가 10 150 %
.

y가 , 1 x

가 - DIN 53 238 .

x = 0.38 0.72, 0.4 0.7

y = 0.14 0.55, 0.17 0.49

$$, x = \frac{X}{X+Y+Z} \quad y = \frac{Y}{X+Y+Z} \quad (\quad , X, Y \quad Z \quad 3 \quad) \quad .$$

[Bayer Farben Revue, Sonderheft 3/2 D, 1986; p. 12 - 14]

, 가
0 074 515 0 073 463 .

0 073 464 .

Li, Cs, Mg, Cd, Co, Al, Cr, Sn 1 Pb, Na, Li K
Na, K, Ca, Sr, Ba, Zn, Fe, Ni, Cu, Mn La
(pH < 7),
(pH 1 7). pH 4.5
pH 4.5 , 4.5 7 .

. 20 가 20 g/l , 50 g/l .

, , , , , , , , , (III),
(III), (II), , , , , , , , ,
, , (III), (III), , , , , ,
, , (II), (II), (II) (II),
.

, 가 .

a) 1 50 99 %, 1 (

(a) , (b) 1 1 100 %, 2 50 %

(c) 가 .

(c) , , .

, () , , .

5 120 , 5 60 , 5 30 , , .

$C_6 - C_{22}$, , .

가 , , , , .

80 % , 1,000 100,000 g/ 가 , .

a1) 6 22 () ,

b1) 4 12 ,

c1) 14 20 () ,

d1) 14 20 () ,

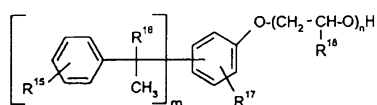
e1) () 가 .

가 , 5 120, 5 100, 5 60, 5 30

a1) e1) .

10 19 712 486 11 19 535 246

10



, R¹⁵ C₁ - C₄ - ,

R¹⁶ CH₃ ,

R¹⁷ , C₁ - C₄ - , C₁ - C₄ - , C₁ - C₄ - ,

m 1 4 ,

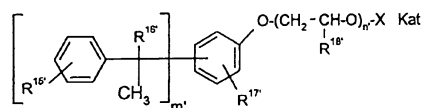
n 6 120 ,

R¹⁸ n , CH₃ , , - (- CH₂ - CH(R¹⁸) - O -) CH₃ 가 R¹⁸ n 0 60% CH₃ n 100 40% , - (- CH₂ - CH(R¹⁸) - O -) R¹⁸ n 0 40% n 100 60% .

10

11 .

11



,

R^{15'} , R^{16'} , R^{17'} , R^{18'} , m' n' R¹⁵ , R¹⁶ , R¹⁷ , R¹⁸ , m n ,

X - SO₃ , - SO₂ , - PO₃ - CO - (R¹⁹) - COO ,

Kat H⁺ , Li⁺ , Na⁺ , K⁺ , NH₄⁺ HO - CH₂CH₂ - NH₃⁺ , , X가 - PO₃ - 2 ,

R¹⁹ 2가 , C₁ - C₄ - , 1 C₂ - C₄ , , (C₁ - C₄ - , C₁ - C₄ - , C₁ - C₄ -) .

11

19 712 486 ,

10

11

19 535 256 ,

11

. X가 - CO - (R¹⁹) - COO - , R¹⁹ 가

11

11

5

99

%

10

1

95

%

(c)

(a)

0.1

100

%,

0.5

60

%

가 가 10 % , 가 가
 가 가 , 가 가 .
 , NaOH KOH, ,
 , , , n - , n - , ,
 ; , , - 5 - , 2,3 - , 2,3 - - 6
 - , , - 3,6 - , 2 - , 2,4 - , 6 -
 - 1,3,5 - , - 2,4 - , 6 - - 1,3,5 - - 2,4 - , .

(a) 20 % , 10 % .

() .

(a) , (b) (c) () 90
 % , 95 % , 97 % .

(a) , , 1 , , (b) , , (c) , ,
 1 가 가 pH가 6.5 , 7 , 가 20 105 , 20 95 ,
 (b) , pH 6.5 , 5
 , , , , , .

() ,

000 nm , 95%가 500 nm , 90%가 200 nm 가 (99.5%가 1),

, 1 가 . (, 가)
 , 가
 , 1
 .

,
 가 .

, :
 - 1 1 ,
 - ,
 - 1 ,
 - .

, ()

(a) 1 1 50 %,

0 20 %,

0 20 %,

10 94 %

.

, , , .
 , -
 , , , , 가
 , .

0.1 10 μm .

가

(, (, ,))
 (, , ,)

/ .

가 :

(a) 1 , 1 " "

(a)

" " 1

AS,
Ca, Mg Al 가 -

가 :

12, 13, 14, 17, 20, 24, 74, 83, 86, 93, 94, 109, 110, 117, 125, 137, 138, 139, 147, 148, 150, 153, 154, 166, 173, 185,

13, 31, 36, 38, 40, 42, 43, 51, 55, 59, 61, 64, 65, 71, 72, 73,

9, 97, 122, 123, 144, 149, 166, 168, 177, 180, 192, 215, 216, 224, 254, 272,

7, 10, 36, 37, 45,

15, 15:1, 15:2, 15:3, 15:4, 15:6, 16

19, 23.

" " 가 , 1 , 1

1 99 %, 5 60 % .

(a)

- 가 .

11 217 514 14
가 .

[Roempp, Lexikon, Lacke und Druckfarben, Dr. Ulrich Zorll, Thieme Verlag Stuttgart - New York, 1998, p. 491/492]

가 .

가 ()

[Roempp Lexikon, Lacke und Druckfarben, Dr. Ulrich Zorll, Thieme Verlag Stuttgart - New York, 1998, p. 445/446]

a) 1 가 , 1 1

b1) 1 ,

b2) 1 ,

c1) ,

d) ,

e) ,

가 가

< >

< 1>

, Me=Ni, R¹=R^{1'}=O, R=R'=OH 1a :

25 g, 200 ml, 10 N 20 ml 1.25 g 30
60 g 가 , 100 ml 30 g 34 ml
30 가 30 ,

, 10N 5 ml

38.2 g , 10 , 10N 33 ml
 pH 8 . 50 2 , 3 ml 10N 14 ml pH 4.
 8 , 70 1 , 80 가
 , 22 g .
 95 100 가 , 1

500 ml . 80 , 100 ml NiCl₂ · 6H₂O 34.5 g
 13 g 5 가 . 80 1 ,
 42 g , 80 1 , 90 2 , ,

42.6 % 가 .

- , DIN 53238 (x, y () 3 Y ())
 x=0.438, y=0.464, Y=58.38 .

< 2>

, Me=Ni, R¹=R^{1'}=O, R=R'=OH 1a :

780 g 136 g 810 g , (30%) 280 g
 - 10 , 15 가 37% , 232 g
 , 15 15 , 2.0 g .
 269 g 가 , 55 가 , 2
 pH 2.5 , 30 , pH 4.8
 30 , 80 가 , pH 4.8 3
 , , 40
 334 g .

1 × 1H₂O C28.4 H2.1 N24.8 K11.6

C27.8 H2.4 N24.3 K12.0

(DSC) . DSC 20 (Mettler) DS
 C . 3 가 10 K/ 가 .
 , 135 (135
 DSC , ± 10). (Fourier) IR
 1 .

425 g 19 945 245 1 170 g
 40% 1 *HSO 5,000 ml
 , 95 가 , 126 g , 6.5% 1060 g 가 ,
 95 1.5 , pH 5.5 , 288 g
 , 80 ,
 .
 - , DIN 53238 (x, y () 3 Y ())
 x=0.435, y=0.467, Y=60.71 .
 < 3>
 1 .
 1 8.3 kg 25 kg pH 8.8 32.5 kg 19.1 kg
 , 70 가 , 30 .
 , 70 9.4 kg 가 , pH 8.8 , ()
 5 % 19 801 759 10 , 7
 0 30 11 , pH 2.0 % , 7
 60 , pH 5.2 , 70 30
 .
 35 , 가 600 μ Si/cm 30
 .
 39 % 가 70
 1 % , .
 - , DIN 53238 (x, y () 3 Y ())
 x=0.442, y=0.465, Y=57.52 .
 < 1>
 ((Butoxyl:) , (Hoechst AG)) 774 ,
 25,000 g/ (70)/2 - (15)/ (15)
 - 가 21% 286 ,
 1 % 70 , 1 100
 .
 (0.5 %) 1
 50 nm 0.14 (0.6 1.0
 mm) . (1%
 95%가 100 nm
)

< >

3/1 1,000 () 34.5
N,N' - - - 4,4' - 13.8

가 .

UV -

s Corning Corp.)) 300 × 350 mm ((Corning:) 7059, (Owen
1.5 2 μm , 110

200 mJ/cm² UV - 0.06% ,
, , 235 30 .

가 .

LCD

, 250 1
(Cielab) E 0.7 .

, (가) 0.7 g -
(Isoderm^R Glanz TS, (Bayer AG)) 10 g ,
(HP Premium^R Ink jet, (Hewlett Packard)) , .

, DIN EN 105B02 500 .
E :

: E = 18.7

: E = 10.5

< 2>

2 , 1 .

1 가 .

E :

: E = 10.1

: E = 8.3

< 3>

(1) 3 1
,

< 4>

1 100 2 40 Helio
gen^RGruen L 9361 (Pigment Green 36, (BASF AG)) 60 1

1
, 가 .

< 5>

, Me=Zn, R¹ =R^{1'} =O, R=OH, R'=NH₂CN 1a

:

:

. 80 가 4.9 (755 g) 5.0 H₂O 10 , 80 가
, 30% NaOH pH 5 , 3
(10) 1 % .

0.3 2 , ZnCl₂ 0.31 가 . 95 pH 5 3
500 ml , 6,700 -
(Tetronic^RT 904,) 40 g , 50 가 .
, 95 2 , 2 , 12
DIN 53238 -

:

x = 0.561, y = 0.365, Y = 26.05

1
, 1 3
() .

< 6>

, Me=Zn, R¹ =R^{1'} =O, R=OH, R'=NH₂CN 1a

:

5 0.3 2 , ZnCl₂ 0.31
 95 pH 5 3
 0.6 500 ml , 50 가 , 95 2
 , 2 , 12
 DIN 53238 -
 :

$x = 0.558, y = 0.358, Y = 21.2$

1
 ()
 < 7 >

, Me=La, R¹=R^{1'}=O, R=OH, R'=NH₂CN 1a
 :

5 0.3 2 , La(NO₃)₃ 0.3
 95 pH 5 3
 0.6 500 ml , 50 가 , 95 2
 , 2 , 12
 DIN 53238 -
 :

$x = 0.540, y = 0.344, Y = 16.6$

1
 ()
 < 8 >

, Me=Ba, R¹=R^{1'}=O, R=OH, R'=NH₂CN 1a
 :

5 0.3 2 , BaCl₂ 0.3
 95 pH 5 3
 (30,000 g/) 40 g 500 ml , 50 가 ,
 , 95 2 , 2 , 12
 , DIN 53238 -
 :

$x = 0.493$, $y = 0.334$, $Y = 11.4$

1

()

< 9 >

, Me=Ca, $R^1 = R^{1'} = O$, R=OH, $R' = NHCN$ 1a

:

5

95

pH 5

3

0.3

2

, $CaCl_2 \cdot 2H_2O$ 0.3

500 ml ,

1,650

) 40 g

, 50

가

(Tetronic[®] T 304,

, 95 2

2

, 12

DIN 53238

:

$x = 0.541$, $y = 0.353$, $Y = 27.63$

1

()

1

3

(57)

1.

, 1

,

1

(,

1

Li, Cs,

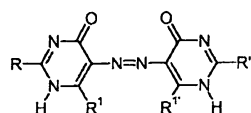
Mg, Cd, Co, Al, Cr, Sn, Pb,

Na, K, Ca, Sr, Ba, Zn, Fe, Ni, Cu, Mn La

- , - ,

)

< 1 >



R R' OH, NH₂, NH - CN, ,

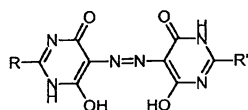
R¹ R^{1'} - OH - NH₂ .

2.

1 , 1 2

.

< 2>



, R R' OH NHCN .

3.

1 ,

, ' () , () (')

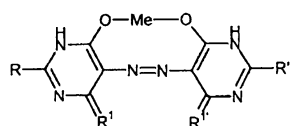
()

4.

1 , 1a 1:1

.

< 1a>



,

Me 1 ,

R R', R¹ R^{1'} 1 .

5.

1 , x y :

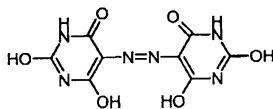
x = 0.38 0.72

$y = 0.14 \quad 0.55.$

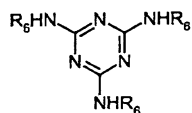
6.

1, 3, 1, 1:1, 2a, 가 .

< 2a>



< 3>



, R_6 , OH, $C_1 - C_4$.

7.

1, 1, 2, 2a, 2b, 2c, 1, 2, .

8.

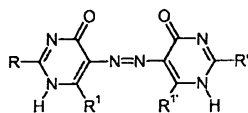
1, 2a, 1, 2 .

9.

a) 1, 1, 1, Li, Cs, Mg, Cd, Co, Al, Cr, Sn, P
1, (, 1, Na, K, Ca, Sr, Ba, Zn, Fe, Ni, Cu, Mn, La, -, -, -
b),),

b), , 20, 가 1 g/l, 0.1 g/l
() 1

< 1>



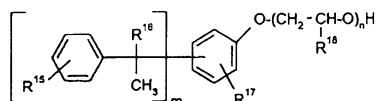
R R' OH, NH₂, NH - CN,

R¹ R^{1'} - OH - NH₂ .

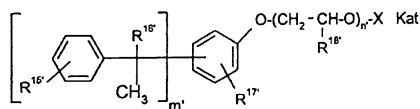
10.

9 , 10 () 11 1 a) 1
100 %, 0.5 60 % 가 .

< 10 >



< 11 >



R¹⁵ C₁ - C₄ - ,

R¹⁶ CH₃ ,

R¹⁷ , C₁ - C₄ - , C₁ - C₄ - , C₁ - C₄ - ,

m 1 4 ,

n 6 120 ,

R¹⁸ n , CH₃ , - (- CH₂ - CH(R¹⁸) - O -) CH₃ 가 R¹⁸ n 0 60% CH₃ n 100 40%
- (- CH₂ - CH(R¹⁸) - O -) R¹⁸ n 0 40%
100 60% ,

R^{15'} , R^{16'} , R^{17'} , R^{18'} , m' n' R¹⁵ , R¹⁶ , R¹⁷ , R¹⁸ , m n ,

X - SO₃ , - SO₂ , - PO₃ - CO - (R¹⁹) - COO ,

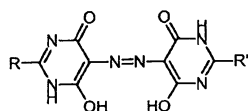
Kat H, Li, Na, K, NH₄ HO - CH₂CH₂ - NH₃ , , X가 - PO₃ 2
Kat ,

R^{19} 2가, , $C_1 - C_4 -$, 1 $C_2 - C_4$,
 ($C_1 - C_4 -$, $C_1 - C_4 -$, $C_1 - C_4 -$) .

11.

9 , 1 2 ,
 , () , () () () .

< 2 >

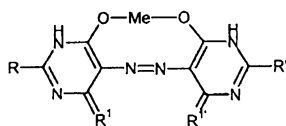


, R R' OH NHCN .

12.

9 , (a) 1a 1:1 .

< 1a >



,

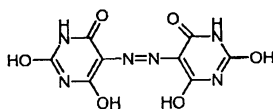
Me 1 ,

R R', R¹ R^{1'} 1 .

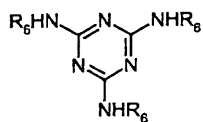
13.

9 , (a) , 가 3 , 1 - 1:1
 2a .

< 2a >



< 3>



, R₆ , OH C₁ - C₄ - .

14.

9 .

15.

$\frac{1}{9} = \frac{1}{3^2}$, $\frac{1}{81} = \frac{1}{3^4}$, $\frac{1}{729} = \frac{1}{3^6}$.

16.

[illegible]

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专利名称(译)	液晶显示器滤色片中的有机颜料		
公开(公告)号	KR1020010095243A	公开(公告)日	2001-11-03
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[标]申请(专利权)人(译)	朗盛德国有限责任公司		
申请(专利权)人(译)	赛斯是德意志密封剂geem BEHA		
当前申请(专利权)人(译)	赛斯是德意志密封剂geem BEHA		
[标]发明人	WOLF MICKEY 울프마이키 RICHTER ROLF 리히터롤프 FAUBION KENT 포비온켄트 HERRMANN UDO 헤르만우도 WITT JOSEF 비트요제프 NYSSSEN PETER ROGER 니썬피터로저		
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摘要(译)

本发明涉及液晶显示器的滤色器中的颜料，其包含根据下列通式 (1) 化合物之一的偶氮化合物的金属络合物或其互变结构，其承载至少一种客体化合物， 1，金属化合物Li，Cs，Mg，Cd，Co，Al，Cr，Sn，Pb，特别优选Na，K，Ca，Sr，Ba，Zn，Fe，Ni，单 -，二 -，三 - 和四阴离子)。 - 1 - <式1 > 在上式中， R和R#39;独立地为OH，NH 2，NH-CN，酰氨基或芳氨基， R 1和R 1#39;独立地为-OH或-NH 2。指数方面 液晶显示器，滤色片，偶氮化合物的金属络合物颜料

