

, , (2)

3.

가.

1)

1884

Congo Red가 , ,
가 .

Azo , 가

Cellulose Van der Waals

가 .

.

: 가 ,

가 , , ,
.

: 1930 I .G , Sirius

, 가 .

, 가

가, Azo ortho- -OH, -COOH, -OCH₃, -

NH₂ 가 ,

.

:

가 , , ,

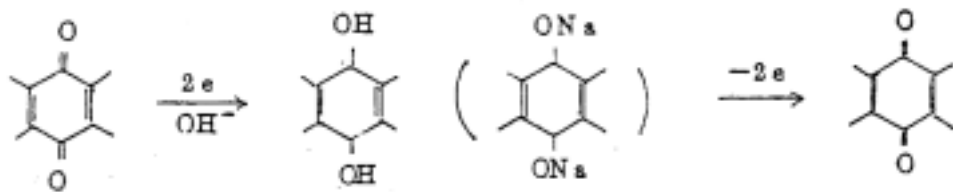
< 5>

< 5>

品名	構造式	備考
一般直接染料 Congo Red Direct Red 28 22120		가장오래 直接染料
Benzo Pur- purine 4B Direct Red 2 23500		
高級直接染料 Direct F. Yellow R Direct Yellow 50 29025		尿素結合
Direct F. Yellow Rsp Direct Yellow 86		Triazine 結合
一般直接染料 Direct Sky Blue 5B Direct Blue 15 24400		
高級直接染料 S1 Sp Blue 3GS Direct Blue 202		金屬錯塩

2)

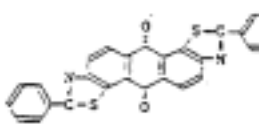
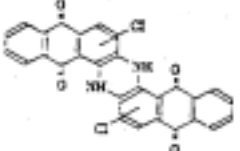
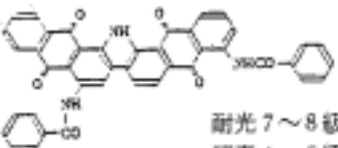
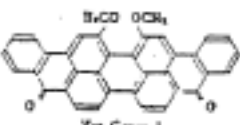
2 Carbonyl ($>C=O$) 가
 , Indigo 「 」 .
 1878 Indigo 가 , 20
 , 1901 Anthraquinone Indanthrene .
 가 hydrosulfite
 가 leuco cellulose 가
 .
 가 가 .



Indigo , Anthraquinone ,
 2 .
 < 6> .

< 6>

Indigo 系		耐光 5 級 鹽素 2 級		耐光 5 ~ 6 級 鹽素 5 級
Thioindigo 系				
	Vat Blue 1 (Indigo)		Vat Red 1	

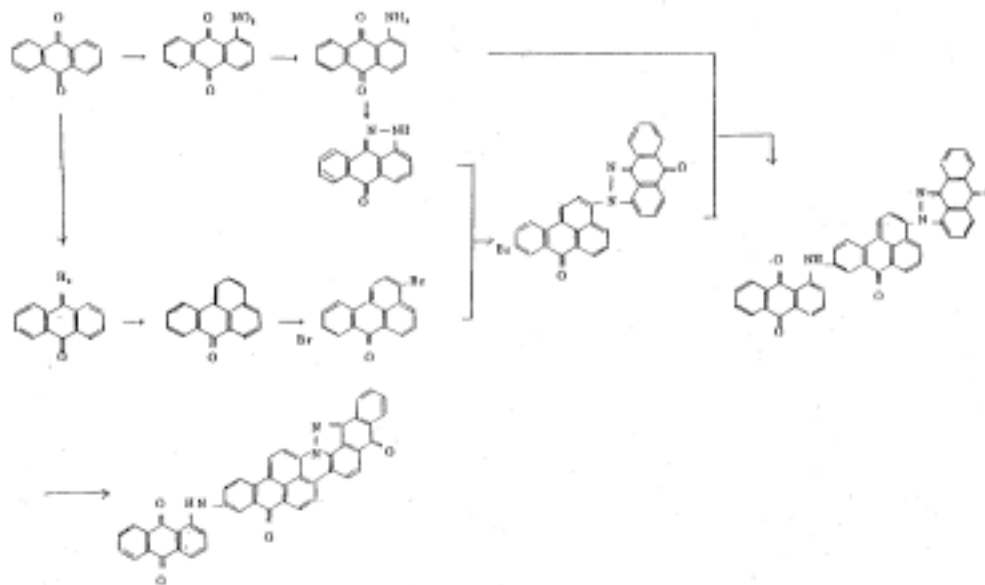
Anthraquinone 系	Anthraquinone-thiazol 系 Indanthrene 系	
	 耐光4級 鹽素5級	 耐光8級 鹽素3~4級
	Vat yellow 2	Vat Blue 6
	Anthraquinone-carbazol 系  耐光7~8級 鹽素4~5級 Vat Brown 3	Di-benzanthrene 系  耐光7~8級 鹽素4~5級 Vat Green 1

< 6>

가

Vat Black 8

. < 2> .



< 2> C.I.Vat Black 8(71000)

3)

1873

가

,

1893

P-

Phenylendiamine

가

,

가

.

,

leuco

cellulose

.

,

,

,

,

가

,

가

가

.

4)

(

)

1880

β -Naphthol

(下漬劑)

,

β -

Napthylamine(

)

diazo

Azo

가

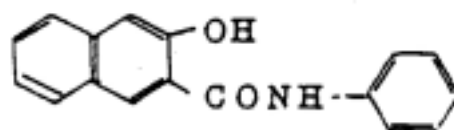
.

가

1912

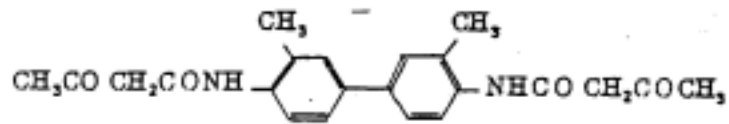
Naphthol AS(下漬劑)

.



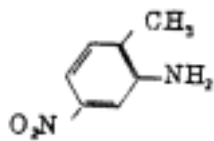
, 1924 Naphthol AS-G

가 ~ ~ ~

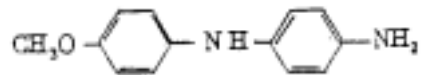


, 60

Fast Scarlet G



Variamine Blue B



Naphthol

cellulose

diazo

Coupling

diazo coupling

diazo

가,

Sulfon

Salt

diazonium

Coupling

Rapid .

Azoic

Azoic 가 가

. Azoic 2000T/Y

, .

5)

Cellulose

. 1895 cellulose benzoil , , ,

cellulose

, 1930 cellulose cyanul ,

Amino 가

.

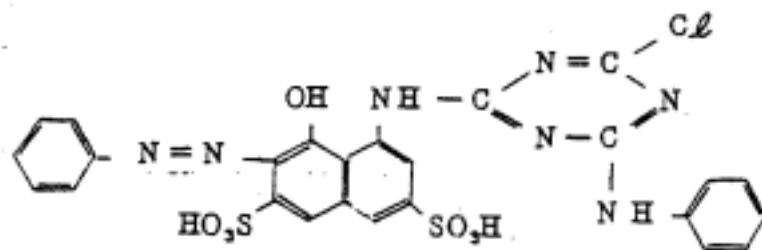
가 1923 ,

, 가

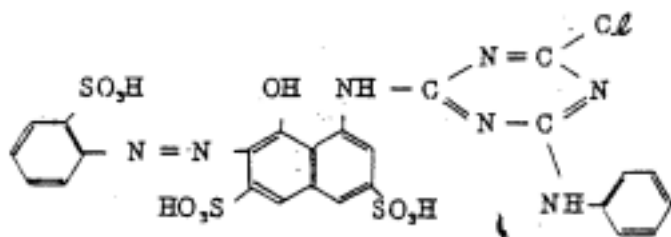
cellulose .

1923

2



C.I.Reactive Red 3 (18159)



1952 Sulphatethylsulfon (Vinylsulfon) 가 가
가

< 7>

	基 本 型					改 良 型				
		特許出願年	市販年	冠 称	文献		特許出願年	市販年	冠 称	文献
Sulphatethylsulfon (Vinylsulfon) -SO ₃ CH ₂ CH ₂ OSO ₃ Na	—	1949	1957	Remazol Sumifix Diamira Galmazol	7	—	—	—	—	
Triazine 	X ₁ =X ₂ =Cl	(1928)	1956	Procion MX Mikacion	8	X ₁ =Cl X ₂ =OCH ₃	1958	1968	Gibacron Pront	13
		1954				X ₁ =Cl X ₂ =NHR (反応基 24)	1961	1968	Procion HB Kayacion ES	16
	X ₁ =Cl X ₂ =NHR	(1933)	1957	Gibacron Procion Kayacion Sumifix II Diacion	8 9	X ₁ =P X ₂ =NHR	1966	1978	Gibacron P Levafix EN	14 15
		1954								
Phrimidine 	X ₁ =X ₂ = X ₃ =Cl	1957	1960	Drimarene X, Z	10	X ₁ = SO ₃ CH ₃	1964	1967	Levafix P	16
		1958		Reactions Gibacron T	11	X ₁ =CH ₃ X ₂ =Cl				
						X ₁ =X ₂ =P X ₃ =Cl	1966	1970	Levafix EA, PA Drimarene K, R	17
						X ₁ =P X ₂ =CH ₃ X ₃ =Cl	1978	1981	Levafix PM	18
異種二官能 Sulphatethylsulfon Triazine 	X=Cl	1963	1980	Sumifix Supra	19 20					

1956 CIC Perkin 100 3 Procion (Di-

Chlorotriazine)가 , 가 100 가

Vinylsulfon(Sulphatethylsulfon) , Triazine , Pyrimidin .

< 7> 가

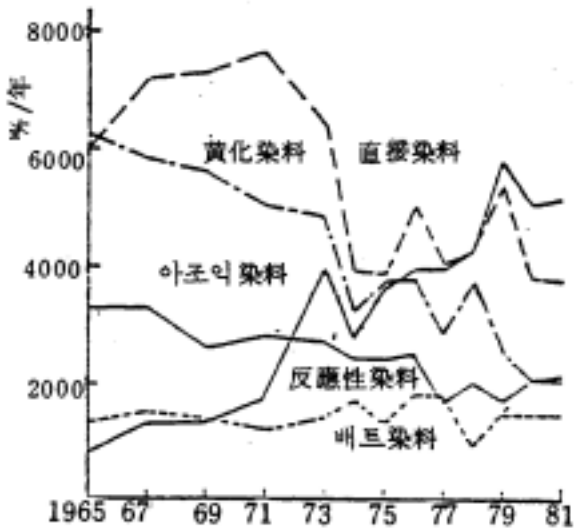
1950 , 1960

1980 Vinylsulfon, triazine

가 2 가 .

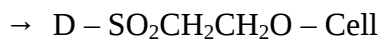
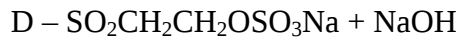
가 , 가 < 3>

1979 cellulose

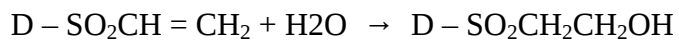


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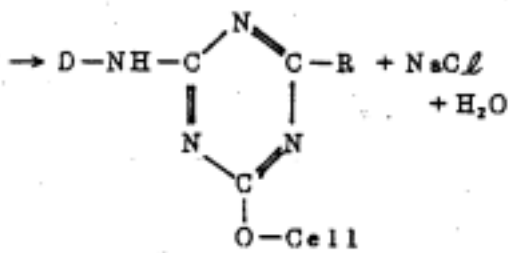
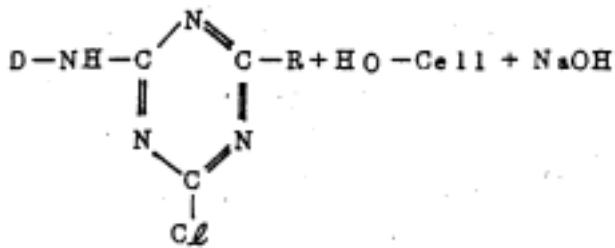
Vinylsulfon



(가)



Monochlorotriazine



cellulose

(가)

10

가

가

..... 15%

MCT

< 8>

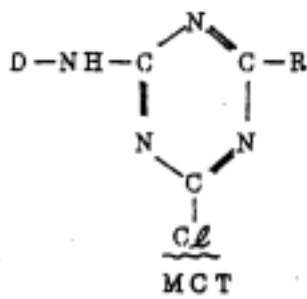
triazine

R 가 (=)가 ,

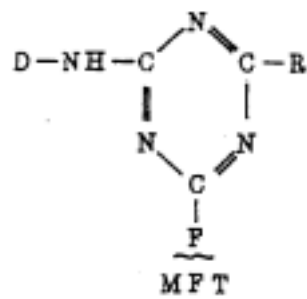
cellulose

, 가

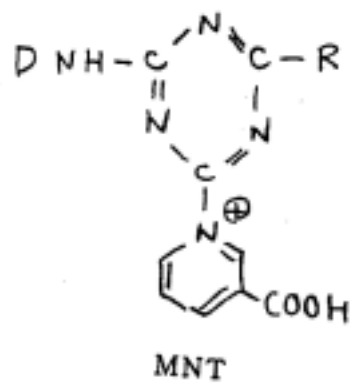
, , 洗淨性 가 .



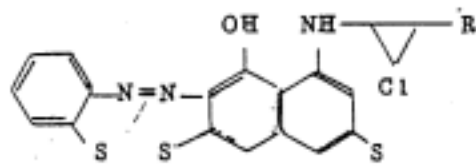
→
固着率
10%向上



→
中性反應型



< 8> MCT



R					
加水分解 速度定数	1.04×10^{-1}	8.65×10^{-2}	1.40×10^{-2}	5.0×10^{-4}	6.7×10^{-6}
同上 比率	208	73	28	1	0.13

染料濃度 6 mM pH 11.2 温度 40 °C ∇:Triazine 環 S : Sulfon 酸基

Vinylsulfon

< 9>

가 (vinylsulfon) , 가 (hydroxyethyl sulfon) .
monochlorotriazine 가
가 .

< 9> Vinylsulfon monochlorotriazine

色素母體	X	親和性 (吸着率)	
		黃酸土 25g/ℓ	同 50g/ℓ
C.I. Reactive Blue 19 (61200) 	$-\text{SO}_2\text{C}_6\text{H}_4\text{OSO}_3\text{Na}$	22%	33%
	$-\text{SO}_2\text{CH}=\text{CH}_2$	81	95
	$-\text{SO}_2\text{C}_6\text{H}_4\text{OH}$	25	25
C.I. Reactive Red 		—	75
		—	75

註) 被染物 : Mercer 化 加工綿糸, 染色濃度 1 %, pH 6.8

染色溫度 : Vinylsulfon 系 40 °C, monochlorotriazine 系 80 °C

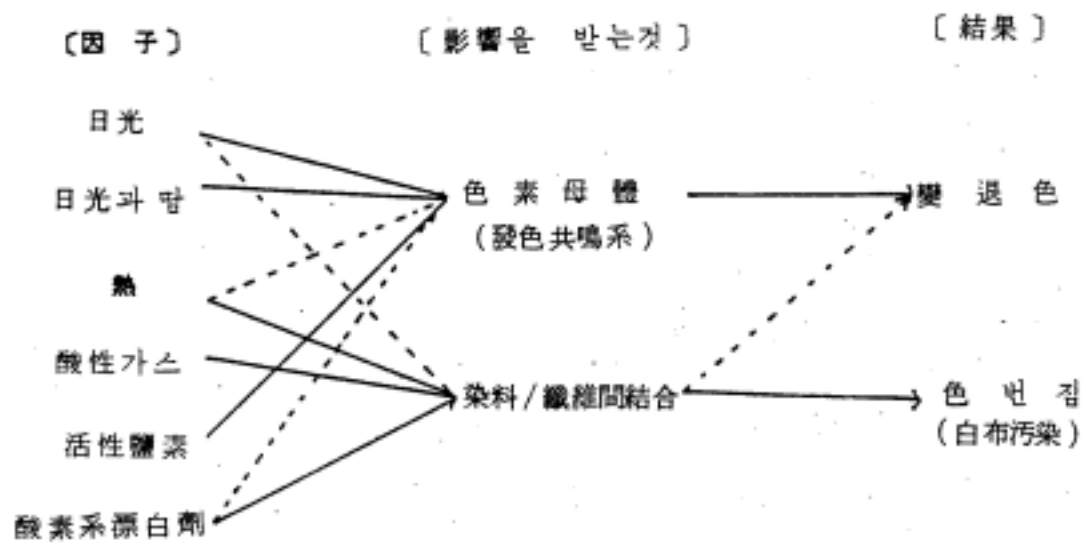
溶比 : 1 : 20 染色時間 60 min.

cellulose

가

가

< 4>



< 4>

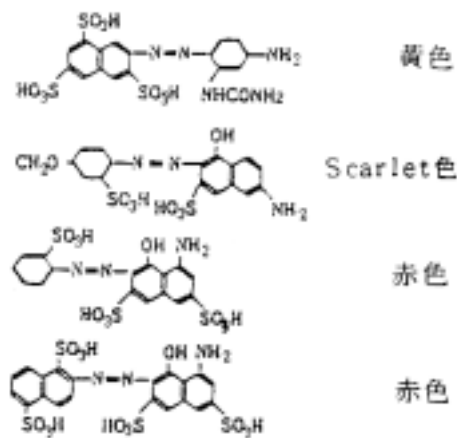
가

가 ,

Azo ortho Sulfon

< 10> , 가

Vinylsulfon 가 가 , monchlorotria
zine monofluorotriazine .



< 10>

	酸 pH 3~4	알 칼 비		熱 180 ℃	酸素系 漂白劑
		pH9~10	pH13~14		
Vinylsulfon	○	○	×	○	○
Monochlorotriazine	△	○	△	△	△
Monofluorotriazine	△	○	△	△	△
Di-fluor omonochloropyrimidine	△	○	△	△	×
Trichloropyrimidine	○	○	△	○	×
Di-chloro-suinoxaline	×	○	△	×	×

注) ○ : 安定, △ : 약간 不安定, × : 상당히 不安定

,

.

> cold pad batch

> 2

pad steam

> 1

pad steam

> 1

pad thermofix

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가

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가

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