

1.

(Urea)

가

(Thiourea)

가 . D. M. Lewis

(isomer)

(ammonium thiocyanate)

(cold pad batch-dyeing)

3가

가

가

가

가

(anionic dyes)

2.

2. 1.

(Spectral Absorption Measurements of Dyes)

0.05g/l 5

10g/l 가

(path length) 0.1 2.0mm Unicam SP 800

2. 2. (Paper Chromatography)

(10g/l)
Synperonic N(10g/l), (pH5)
가 . 20 12
: n- : 1: 1: 1 n- :
-4: 3: 3 (eluent) Whatman 3MM Paper
(descending)

2. 3. Procion Brilliant Red MX- 2 B(C. I. Reactive Red Dihydroxy
Monochloro- monohydroxy

, Procion Brilliant Red MX-2 B(1g) 1M NaOH(50ml)
4 95
- (1g) 0.05M NaOH(50ml)
, 40 30 (HCl) pH7
. 가

2. 4. Procion Brilliant Red MX- 2 B(C. I. Reactive Red)

-가 .
(buffer) 25
(water bath) (at zero time)

가 , 25 2
-가 .

Unicam SP 600 , 455nm peak

1 가 k log(/ , t)

2.303 .

2. 5. (Cold Pad-Batch Dyeing)

Salt's standard wool serge (10g/l) Synperonic N(10g/l), (pH5),

(가 가) (padding liquor)

(100% pick-up) (20) . (stripping agent)

80

%(percentage exhaustion) %(percentage fixation)

.

3.

3. 1. -

가

5 (equalizing acid dyes),

3 (acid milling dyes) 3 (carbolan dyes) 10

. 가

가 (cold pad-batch system)

(dye-disaggregating agent)

(dimethyl formamide)

(disaggregate)

가

. Long-liquor dyeing

가

가

(monomer)

(dimer)

1

(reactive dyes),

< 1 > 가

(x-band, y-band)

Medium*	$\lambda_{\max}$		Absorbance		Absorbance Ratio
	x	y	x	y	(y/x)
C.I. Acid Red 1					
Conc.: 0.05 g/l – path 20 mm and (10 g/l – path 0.1 mm)					
1	550 (496)	528 (530)	1.70 (1.64)	1.69 (1.18)	0.99 (0.72)
2	505 (503)	532 (534)	1.70 (1.73)	1.72 (1.52)	1.01 (0.88)
3	505 (503)	532 (534)	1.70 (1.68)	1.72 (1.44)	1.01 (0.86)
4	505 (503)	532 (534)	1.70 (1.67)	1.71 (1.37)	1.00 (0.83)
5	505 (500)	528 (530)	1.68 (1.67)	1.70 (1.17)	0.99 (0.70)
C.I. Reactive Red 159					
Conc.: 0.05 g/l – path 10 mm and (5 g/l – path 0.1 mm)					
1	517 (517)	547 (547)	1.02 (1.01)	1.02 (0.97)	1.00 (0.96)
2	517 (517)	547 (547)	1.04 (1.01)	1.06 (1.02)	1.02 (1.01)
3	517 (517)	547 (547)	1.03 (1.01)	1.05 (1.02)	1.02 (1.01)
4	517 (517)	547 (547)	1.03 (1.01)	1.04 (1.00)	1.02 (0.99)
5	517 (517)	547 (547)	1.01 (0.99)	0.99 (0.92)	0.98 (0.93)
C.I. Acid Red 155					
Conc.: 0.05 g/l – path 10 mm and (5 g/l – path 0.1 mm)					
1	525 (515)	552 (555)	1.40 (1.34)	1.38 (0.88)	0.99 (0.66)
2	525 (520)	558 (558)	1.42 (1.38)	1.48 (1.18)	1.04 (0.86)
3	525 (520)	558 (558)	1.40 (1.36)	1.43 (1.04)	1.03 (0.77)
4	525 (520)	558 (558)	1.40 (1.34)	1.42 (1.01)	1.02 (0.76)

* 1 = water

2 = 10% (vol./vol.) dimethylformamide

3 = 30% (wt/vol.) urea

4 = 10% (wt/vol.) thiourea

5 = 6.5% (wt/vol.) ammonium thiocyanate

Camerol Tull 2 (peak)
 (Splitting) 가 ,
 (y-band) , (x-
 band) . (y/x)
 .
 Coates
 ;
 , (Order)
 . 1
 .
 가 .
 , (dimethyl formamide), ,
 , (ammonium thiocyanate) (dye aggregation)
 가 .
 5g/l 300g/l
 ,
 (aggregating agent) . ,
 (cold dyeing) (potential) (limited

value) . (

가).

,

Carbolan Red B(C. I. Acid Red 138)

. Carbolan Red B ,

가

.

C. I. Acid Red 138 ,

$[\text{CH}(\text{CH}_3)_{11}]$ 가

(activity)

Carbolan

가

,

.

가

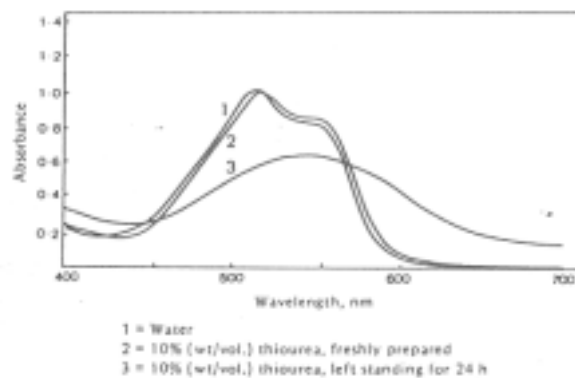
(clathrate compound)

(ester)

.

C. I. Acid Red 138

.



< 1 >. C. I. Reactive Red 2

(=5g/l =0,1mm)

, Procion Brilliant Red MX- 2 B(C. I. Reactive Red 1)

Procion Brilliant Red MX-5 B(C. I. Reactive Red 2)

. (1).

C. I. Reactive Red 2

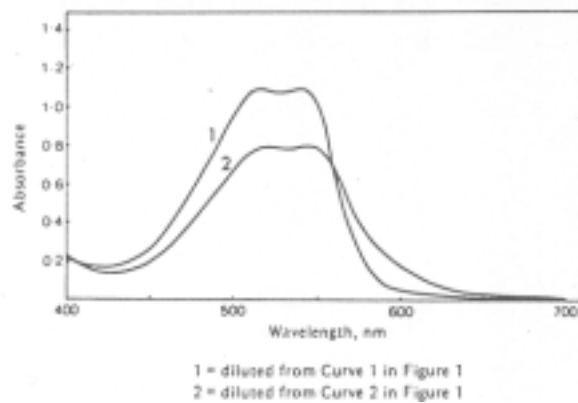
가

가 .

가

가

.(2).



< 2 > C. I. Reactive Red 2

(=0.04g/l, =10mm)

. Guise Stapleton (Chromophore)

(isothiouronium) 가

가 . Bell Lewis

가

(cationic thiouronium salt group)

(Internal salt)

3. 2.

가 Procion

(Levafix Brilliant Red E-6 BA C. I. Reactive Red 159)

가 C. I. Reactive Red 159

(paper chromatography) 가

(cold pad batch dyeing)

가

2 가 C. I. Reactive Red 1

< 2 >. 가 Procion Brilliant Red MX 2 B(C. I.

Reactive Red 1)

R_f

Initial	Separation	R _f	Relative Quantity
Parent dye	dichloro component	0	++++
	monochloro component	0.11	++
	unidentified component	0.43	+
Monochloro-monohydroxy derivative	monochloro-monohydroxy component	0.11	++++
	dihydroxy component	0.26	+
Dihydroxy derivative	dihydroxy	0.26	++++
Thiourea treated sample	dichloro component	0	++
	monochloro component	0.11	++
	product of reaction	0.19	++
	unidentified component	0.43	+
Ammonium thiocyanate treated sample	dichloro component	0	+++
	monochloro component	0.11	++
	product of reaction	0.23	+
	unidentified component	0.43	+

+ slight trace + + + + intense band Chromatographic eluent: n-butanol-ethanol-water, 4:3:3

(monohydroxy-monochloro)

(dihydroxy)가

C. I. Reactive Red 2

(compound) (trace)

가

가

가

가 C. I. Reactive Red 1가

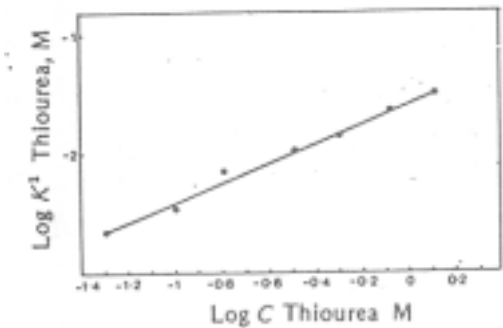
가 , pH5

가

(0.1g/l) 가 1

(half reaction)

3 log() log(K)



< 3 >. C. I. Reactive Red 2

가 (K)

procion H

.(

1.28M $K=3.2 \times 10^{-2}$) ,

· ,

, 가 ,

가

· (Cold pad-batch technique) ,

C. I. Reactive Red 1

가 .

4 가

(exhaustive Curve) (fixation curve)

, ,

thiourea가 .

가

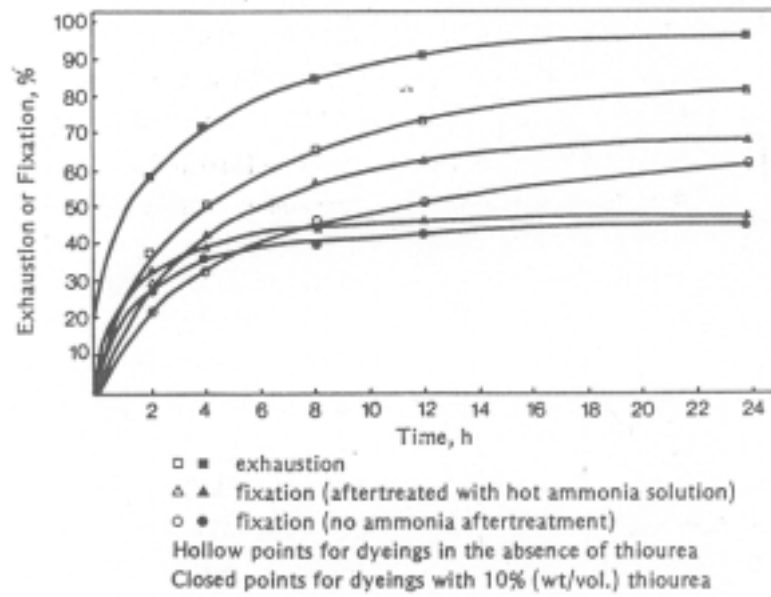
(10g/l,

40 30)

가 가

가

parent



< 4 > 가 C. I. Reactive Red 1

4.

,

(acid salt)

(ammonium thiocyanate)

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