

가

4

1.

10

1~2 ° Tw

가

2~3

1~2 ° Tw

20~30

가

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가

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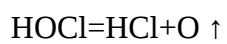
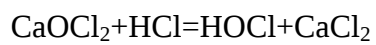
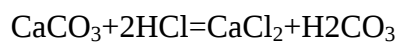
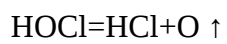
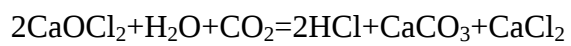
가

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가

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가

가 (가) .

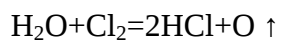
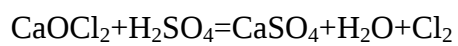
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가

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가

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가

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가

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가

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2.

1798 Tannant

가

lancasia

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Tannant

가

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가

가

가

가

가

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10%

,

4.5~6.5Valt

20

15~30g/l

가 .

Na⁺ ,

OH⁻

가 .

NaCl → Na⁺ + Cl⁻

Na⁺ + H₂O → NaOH + H⁺

2NaOH + 2Cl → NaCl + NaOCl + H₂O

.

24

가 .

Keller,

Hass Und Oetel, Schuckert, Siemens, Mather and Platt

.

,

,

,

35%

(

: :985(12), 867(14), 384(15))

70% , 90% 가 ,

I.G. Perchloron 80~90%

I.C.I. Maxochlor 75%, Mathieson Alkali works H.T.H.(High

test Hypochlorite 60%

[Ca(Ocl)₂] ,

가 . ,

CaCl₂

< 18>

比 重	T w	B a r	高度漂白粉 70 %品	高度漂白粉 63 %品	普通漂白粉 35 %品
1.0013	0.25	0.18	2.0	2.0	1.40
1.0025	0.5	0.36	3.3	3.1	2.71
1.0050	1.0	0.73	5.5	5.4	4.00
1.0075	1.5	1.08	7.9	7.6	5.88
1.0100	2.0	1.43	10.5	10.0	7.00
1.0125	2.5	1.78	13.1	12.5	8.40
1.0150	3.0	2.13	15.6	15.0	10.00
1.0175	3.5	2.51	18.2	17.3	11.41
1.0200	4.0	2.89	20.6	19.9	12.00
1.0250	5.0	3.97	25.7	24.4	17.00
1.0300	6.0	4.20	30.0	29.3	17.36
1.0350	7.0	4.88	35.8	34.1	20.44
1.0400	8.0	5.55	41.0	39.2	23.75
1.0450	9.0	6.21	46.0	44.1	26.62

比 重	T w	B w'	高 度 漂 白 粉 70 %品	高 度 漂 白 粉 63 %品	普 通 漂 白 粉 35 %品
1.0500	10.0	6.87	51.2	49.1	29.60
1.0550	11.0	7.52	55.4	53.54	32.68
1.0600	12.0	8.11	61.7	59.20	35.81
1.0650	13.0	8.81	66.8	64.10	39.10
1.0700	14.0	9.44	72.0	69.2	42.31
1.0750	15.0	10.07	77.07	74.2	45.7
1.0800	16.0	10.69	82.6	79.4	48.9
1.0850	17.0	11.30	87.6	84.2	52.27
1.0900	18.0	11.92	92.8	89.2	55.18
1.1000	20.0	13.23	103.7	100.0	61.50
1.1050	21.0	13.82	109.3	105.2	64.50
1.1100	22.0	14.41	114.8	110.3	68.00
1.1150	23.0	14.99	120.1	115.6	71.50
1.1200	24.0		126.21	121.0	
1.1300	26.0		136.8	131.0	
1.1400	28.0		148.0	142.0	
1.1500	30.0		159.1	153.0	
1.1600	32.0		170.6	164.0	
1.1700	34.0		182.8	175.1	

가

Ca-

가

가

. Kind

가

Na-O-Cl

H-Cl=O

3가

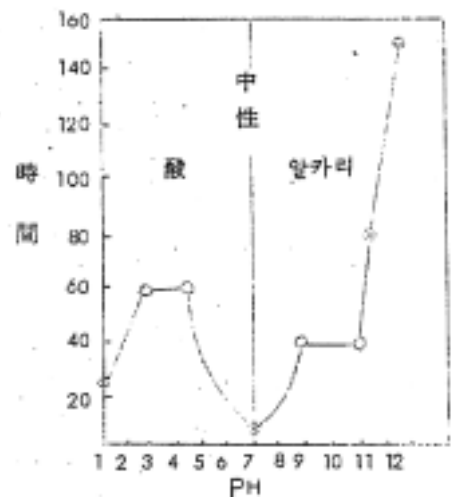
3.

1) PH

Alkali (PH 9.5~10.5)

Alkali (PH 9.5 → 6.0 → 5.5)

Alkali
가 가 .



< 9>

Clibbens Ridge Oxy-cellulase

PH4.6 10 .

Ion(ClO⁻) 가

. Blakeley PH

PH7 가 .

9

가 .

Kauffmann 가

PH7~11 1l 1~1.5gr

가 5g/l 가 PH

PH

19

< 19> PH

	漂 白 粉		次亜塩素酸소다		소 나 灰 + 次亜塩素酸소다	
循 環 前	11.05	8.55	11.55	9.35	11.2	10.1
5 分	9.25	8.45	10.5	9.25	-	-
15 分	8.95	8.3	9.7	9.05	10.95	9.95
30 分	8.7	8.15	9.35	8.9	10.8	9.95
34 分	8.85	8.4	9.8	9.2	10.75	-
45 分	8.7	8.2	9.4	9.1	10.65	9.9
60 分	8.5	8.0	9.2	8.9	10.5	9.85
90 分	8.25	7.65	8.8	8.6	10.3	9.8
120 分	8.1	7.45	8.5	8.45	10.2	9.75
150 分	7.95	7.35	8.35	8.3	10.15	9.7
23 時間	6.6	6.0	6.75	7.0	9.8	9.6

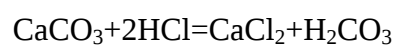
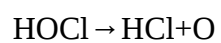
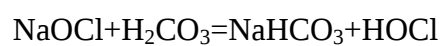
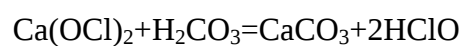
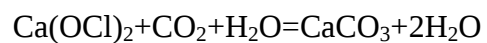
2) 가

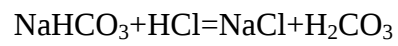
가

가

가

가





가 .

3)

가

. 가

가 . 가

. Cobalt

.

Ni, Co, Fe, Cu

. 가

Oxy-cellulose가 가 .

4)

1891 Bayer

가 . Depierre

Pad

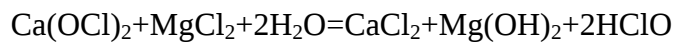
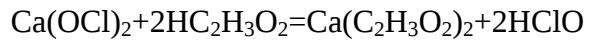
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가

가 Oxy cellulose

가 . MgCl_2

가 .



5)

가
 , Foerster Jorre 7.5
 2 가 .
 40 Oxy-cellulose
 가 가

6)

가 Keller
 Oxy-cellulose Kind
 가 가 가
 Oxy-cellulose

7)

White Sour 1 ° TW
 가 CaCl_2 CaCl_2
 CaSO_4
 가

가

가

가

가 Alkali 가

가

가

8)

가 (泥)

가 100 100~120gal.

1 1gal.

12 ° TW

15 가

1 Syphon Syphon

가 2

3 Alkali 가

Mn Fe

가

CaCO₃

CaCO₃

가

9) (Yellowing)

가

a) Yellowing

Ca

Mg

,

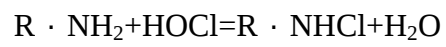
.

b)

c) Oxy-cellulose

d)

Chloramine



4.

, 가

가

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가 .

)

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)

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0.2~2.5% ,

가 .

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)

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0.67~1.8% ,

가 .

가

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가

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가

가

가

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가

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3

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0.3%

1

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가 .

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Ca

가

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가

가

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