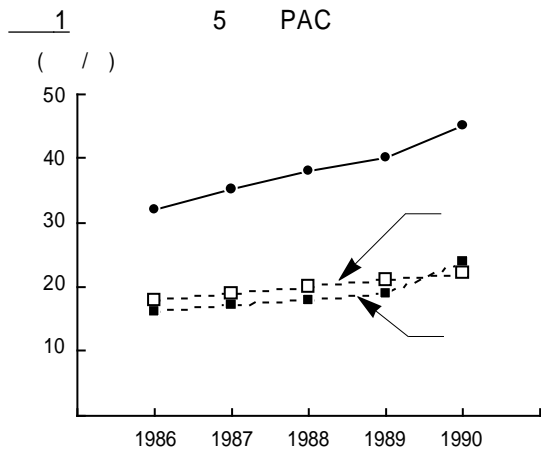


# PASS · PAC

# 가

(PAC), 가 . (PACS), (PASS), 2 , ( ) , 가 ( ) , 가 1 가 2 가 Chloride: PAC) 가 가 (Polyaluminum 가 10 가 가

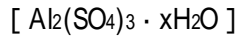


H<sub>2</sub>O Böhimitte d<sub>204</sub> = 3.014  
 Al<sub>2</sub>O<sub>3</sub> · 2H<sub>2</sub>O [ Al<sub>2</sub>O(OH)<sub>4</sub> ] Bauxite  
 3H<sub>2</sub>O . Al<sub>2</sub>O<sub>3</sub> · 2H<sub>2</sub>O [ AlO(OH)<sub>4</sub> ]  
 6  
 Hydrargillite d<sub>20</sub> = 2.424, HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>

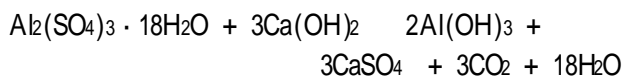
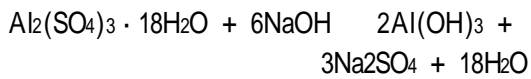
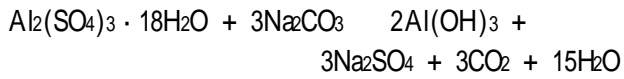
[ AlO(OH) ]

— AlO<sub>3</sub> · H<sub>2</sub>O  
 Diaspore  
 — Al<sub>2</sub>O<sub>3</sub> ·  
 Al<sub>2</sub>O<sub>3</sub> · H<sub>2</sub>O Al<sub>2</sub>O<sub>3</sub> ·  
 Bayerite, Hydrargillite Gibbsite  
 Bayer d<sub>20</sub> = 2.529,  
 . 15% HCl

가 Hydrargillite HCl NaOH  
 $Al(OH)_3$  가 HCl,  $H_2SO_4$   
 가

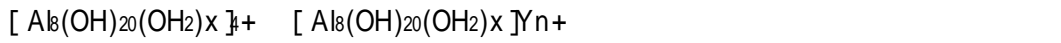


가 , 가 , 가

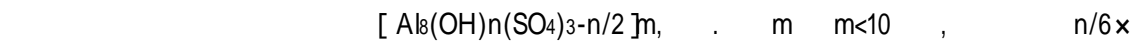


가 가 가 가 가 가  
 가

3가  $[ Al(OH)_6 ]^{3+}$   
 pH가 5.5 ~ 7.0



가

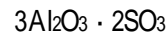


$SO_4^{--}$   
 $AlCl_3, Al(OH)Cl_2, Al(OH)_2Cl, PO_4^{--}$

$[ (OH)/(Al) ]$  가

가 가

$[ (OH)/(Al) = 7/9 ]$  가



(20 ) 3 ~ 6cps, -10 ~ -20

가 , 가 , 가 , 가 , 가  
 가 , 가

3.4 ~ 3.8      25      11cps,      50 ± 4%      Al<sub>2</sub>O<sub>3</sub> 8.3%      1.28(20 )      pH  
 PASS      가      가

NaAlO<sub>2</sub>      Na<sub>2</sub>O · Al<sub>2</sub>O<sub>3</sub>      1.58,      1800 ,      가 ,  
 가      pH12.3      가  
 가

1 ( : 14%Al<sub>2</sub>O<sub>3</sub>, , %)

	1988		1989		1990		
	949,858	100	998,839	105	1,024,606	108	103
	503,305	53.0	541,707	54.2	546,591	53.4	1
	147,361	15.5	141,927	14.2	140,398	13.7	1
	248,321	26.1	269,890	27.0	289,775	28.3	7
	50,929	5.4	46,720	4.7	46,488	4.5	1
	949,916	100.0	1,000,253	100.0	1,023,252	100.0	2

90  
 (Aluminum Sulfate)  
 100  
 53%  
 , 89  
 1% 가

2 ( : M/T, %)

	1988		1989		1990		
	397,219	100	414,097	104	463,049	117	112
	192,095	48.5	200,505	48.3	236,526	51.3	18
	199,702	50.5	211,309	50.9	222,597	48.3	5
	3,890	1.0	3,529	0.8	1,989	0.4	49
	395,696	100.0	415,343	100.0	461,112	100.0	11

7%  
 가

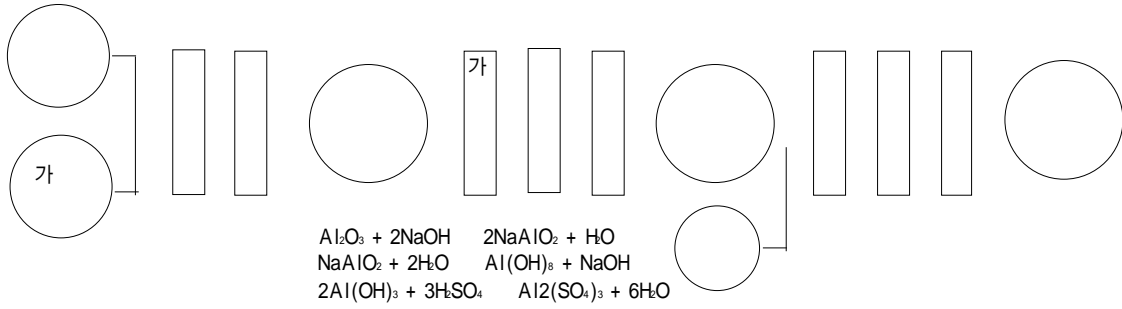
),      ,      ,      ,      ,      ,  
 가      KG      가 20 ~ 21.10      65 ~ 70  
 (Polyaluminum Chloride)      18%,      5% 89  
 11% 가,      12% 가      ,      46  
 가      KG      40  
 42      . 가      2      , 가      가  
 (NaAlO<sub>2</sub> : Sodium aluminate ; Aluminum Sodium Oxide)      (  
 ),      (      ),      ,  
 . 90      2 5000      , 가      91 9  
 KG 50  
 (Polyaluminum Silicate-Sulfate : PASS) 91 10 日本輕金屬  
 가      PAC      PAC KG 42      PASS 40  
 ,      ASA(      )

Alum · PAC

가

KS 23 , 93  
 가 26% 26 8000 , 가 54%  
 6 9000

2



UR

45 , 25 가  
 , 가 가 가  
 가 70% 20%  
 895 , 2 7408m3 92 1053 , 4 1863m3 , 가  
 93 6355 , 68 60 15%, 34.5%  
 가 가 가

3

( )

	1.19
(Al <sub>2</sub> O <sub>3</sub> )%	10.0 ~ 11.0
%	45 ~ 65
pH(1 w/v % )	3.5 ~ 5
(SO <sub>4</sub> <sup>2-</sup> )%	3.5
(N)%	0.01
(As)ppm	5
(Fe)%	0.01
(Mn)ppm	25
(Cd)ppm	2
(Pb)ppm	10
(Hg)ppm	0.2
(Cr)ppm	10

4

		(PAC)
pH	6.1 ~ 6.3,	4 ~ 7,
	10	
	2 ~ 3	1
		, 1/2
		가
		가
가		

5

(1977 )

	1	2	
	-	-	~
(Al <sub>2</sub> O <sub>3</sub> )%	15.0	14.0	8.0 ~ 8.2
pH	3.0	2.5	3.0
%	0.1	0.3	-
	0.03	0.03	0.01
(N) %			
(As) ppm	20	20	10
(Fe) %	0.06	1.5	0.02
(Mn) ppm	50	150	25
(Cd) ppm	4	4	2
(Pb) ppm	20	20	10
(Pb) ppm	0.4	0.4	0.2
(Cr) ppm	20	20	10

PAC

가가

6 (KS)

	1		2		3	
	1	2	1	2	1	2
(%)	0.1	0.2	0.4	0.8	0.2	0.8
(%)	0.1	0.2	0.3	0.3	0.2	0.4
(%)	0.01	0.01	0.5	0.9	0.01	0.9
(%)	17.0	16.0	16.0	16.0	14.0	14.0

7 가

	가	가
1991	1,500	6,655
	52,000	73
1992	1,053	6,655
	41,863	73
1993	895	6,355
	27,408	68.6

8 ( )

(20 )	1.19
PH (1W/V% )	3.5 ~ 5.0
(%)	10.0 ~ 11.0
(%)	45 ~ 60
(%)	3.5
(%)	0.01
(%)	0.01
(ppm)	5
(ppm)	10
(ppm)	2
(ppm)	10
(ppm)	25
(ppm)	0.2

) - M/T, m<sup>3</sup>  
 가 - / , /

20% 2 PAC

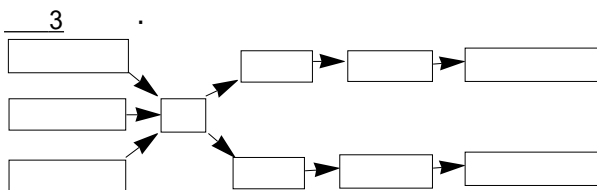
10 , 80% 8

PAC

2

가  
 (floc)  
 PAC

가  
 (SO<sub>4</sub><sup>2-</sup>) 가



9 KIST Jar Tester

(1) (Al<sub>2</sub>O<sub>3</sub>; 7.2%)

(μℓ/ )		70	75	80	85	90
(NTU)	5.4	2.4	1.9	2.3	1.8	2.3
COD <sub>MN</sub> (mg/ )	4.4	3.0	2.2	2.4	2.6	2.6
PH	7.17	6.72	6.67	6.59	6.55	6.53
(μℓ/ )	—	70	46	70	67	58
Ca(OH) <sub>2</sub> (mg/ )	—	3.15	4.07	5.00	6.11	6.29

(2) PAC (Al<sub>2</sub>O<sub>3</sub>; 9.6%)

(μℓ/ )		20	25	30	35	40
(NTU)	5.6	2.6	1.6	1.3	0.8	0.9
COD <sub>MN</sub> (mg/ )	4.4	2.4	2.3	2.2	2.2	2.6
PH	7.18	7.02	6.99	6.97	6.93	6.90
(μℓ/ )	—	68	70	76	74	77
Ca(OH) <sub>2</sub> (mg/ )	—	—	—	—	0.74	1.11

(3) PASS (Al<sub>2</sub>O<sub>3</sub>; 8.3%)

(μℓ/ )		10	15	20	25	30
(NTU)	5.5	5.1	0.6	0.5	0.5	0.6
COD <sub>MN</sub> (mg/ )	4.4	4.4	2.9	2.5	2.0	2.2
PH	7.16	7.14	7.09	7.06	7.01	6.99
(μℓ/ )	—	43	26	28	28	23

PAC 가 93 126 70 .  
PAC  
PAC , PAC가

PAC, 2  
PAC 가 .  
PAC ,  
2 .

PASS(Poly Aluminium Silicate Sulphate)  
92 9 , PASS 1 2000 가 ,  
4 , 가

95 0.2PPM  
PASS 가 ,

< 1994/3/1 >