

ALCOHOL

가

(: M/T)

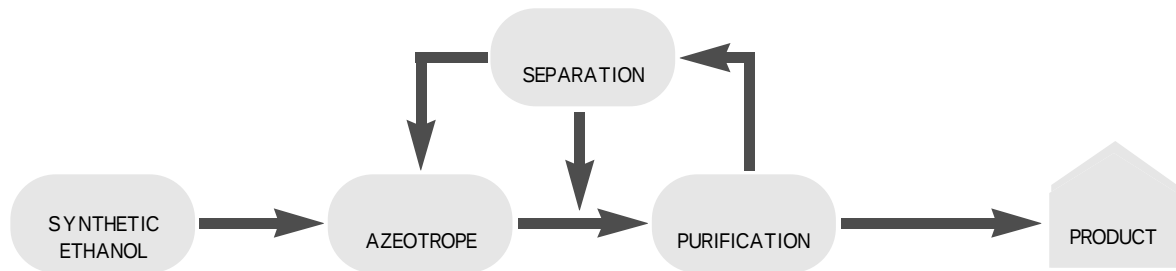
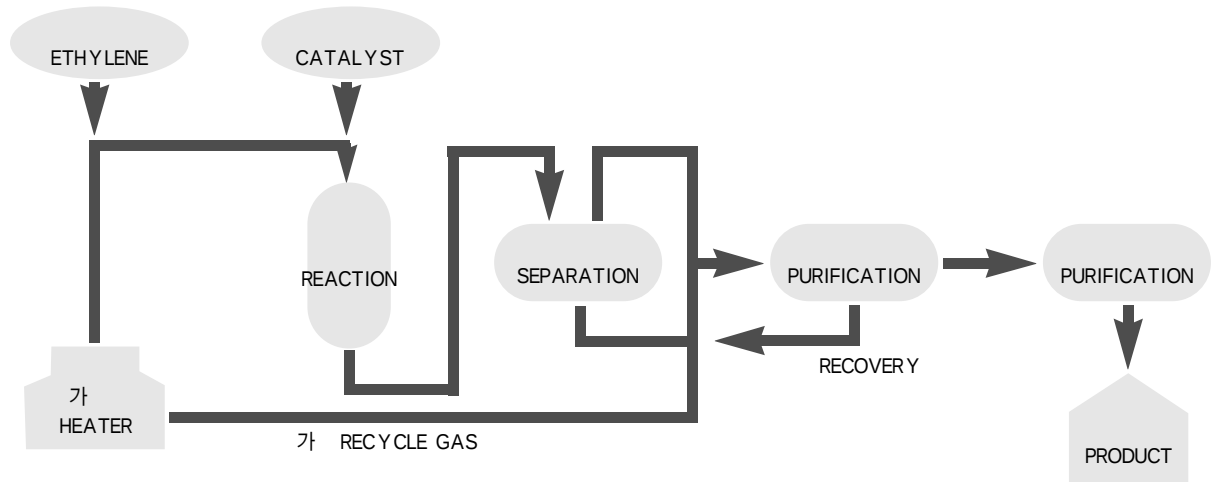
가

16

5%

가

LG



가

94%

33 gallons

가 2 1500 gallons 14 3400
gallons 16 5000 gallons 94 8000 gallons, 12
7500 gallons 13 5500 gallons
2/3
2 900 gallons, 1 5000 gallons 3 6200 gallons
94 1 6600 gallons, 3 8000 gallons 5 6000 gallons
33 gallons 31 gallons

3800 gallons, 4500 gallons 8300 gallons
2600 gallons, 3800 gallons 6400 gallons
70 가

16 4900 gallons 94 13 5500 gallons

40

ADM(Archer Daniels Midland Company) 8 5600 gallons

60% Pekin Energy, New Energy Company of Indiana,

Minnesota Corn Processors

UCC, Quantum, Eastman

2 1500 gallons

8000 gallons

93

14 8000 gallons

12 gallons,

Solvent 1 2700 gallons,
82%

9600 gallons,

5000 gallons

가 (: 100 gallons)					() (: 100 gallons)				
					1990	1991	1992	1993	1998
1,649	361	83	3,300	5,395	782	123	94	50	1,049
215	209	38		462	916	123	91	50	1,180
1,434	152	45	3,300	4,931	1,112	125	93	50	1,380
1,355	557	64	3,100	5,076	1,204	127	96	50	1,477
80	166	26	-	272	1,500	132	98	50	1,780
1,275	379	38	3,100	4,792					
7	12	-	-	19					

) CEH) 1993

98

0.5%

가

98

16 8000 ~22 8000 gallons
, Ethyl Acrylate Vinegar

glycol ethers

가가

가

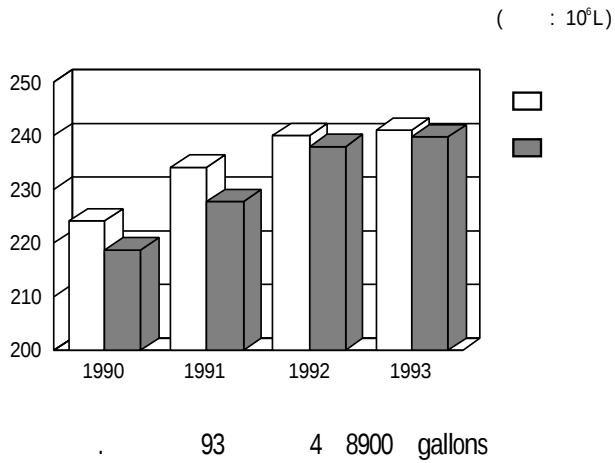
98

14 gallons, Solvents

1 3200 gallons,

1 3200 gallons,

5000 gallons



가 가 가

가 93

5 5700 gallons
70%

가 17%, 가 30%, 18%,
98 14% 가

38% 19% 83~93 3.2% 가
가 98 4%

() (: 1000M/T, %)

1990	1991	1992	1993	1994
86.8	89.9	3.6	90.4	0.6
71.4	74.8	4.8	78.1	4.4
14.7	15.1	2.7	20.1	33.1
45.8	48.0	4.8	49.4	2.9
218.7	227.8	4.2	238.0	4.5
90.4	-	98.3	8.7	
79.9	2.3	90.8	13.6	
17.2	14.4	17.5	1.7	
52.1	5.5	60.4	15.9	
239.6	0.7	267.0	11.4	

: CEH

89 1 3000~1 4000k l 가 83
5.3% 가 , 85 1 3000~1 5000
90% . 80
가
93 가 30%, 20%, 19%, 11%,
5%, 4% . 92 24%, 22%

가 , MTBE 가

69 1 6000 가 76 33
71 5 가 5 , 가
6~9

17 2800 , 50

Power GAS

(가)	(: M/T)			
1991	1992	1993	1994	
2,268		14,448	16,413	
69,895	71,412	82,138	179,357	
	17,969			
1,879		2,884	23,337	
8	22	13	17	
9	14	11	12	
18	26	17	16	
4				
5,985	965			
			4,963	
18	15	69	4,110	
3,150				
54,626	105,554	32,959	60,225	
100,286	102,332	131,699	169,134	
		15,022	4,741	
127,125	222,223	247,637	143,918	
가		5,243		
	3,063	10,900	8,326	68
	368,334	531,432	540,466	606,313

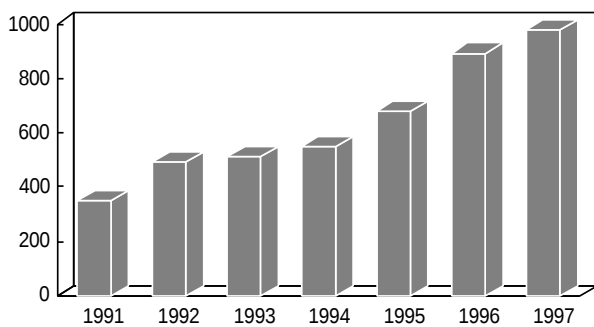
MDF

3 , MDF 가 35% 가 77 4

2

92 22 92 7 1000 , 93 8 2000 , 94 17 9000 , 94 14 4000

(: 1000M/T)



28 33

220

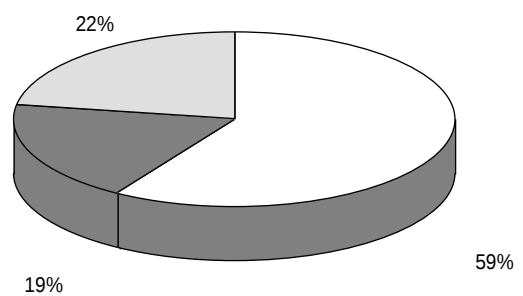
94 58 8000 33% 93
21 7000 95 25
3% 가
9000 , 96 32
MTBE 93 9 5000 , 94 9
8000 95 10 6000 , 96
18 6000
93 9 4000 94
9 5000 , 95 2
94 DMT 2 4000
MC/MA 5 4000 , MMA
1 6000 , Methyl Acrylate 1
DME 5000 6 9000

가
가가

80% 0.53 4 2

()

(: %)



93 1 4000 94 1 6000 , 93 2800 94 2
 3000 , 92 10 93 13 , 94 17 93
 54 94 60 6000
 80 가 85
 , LG ,
 가 가
 200 94 C&F 680 91
 가 530 5 200
 가 MTBE 가 MTBE

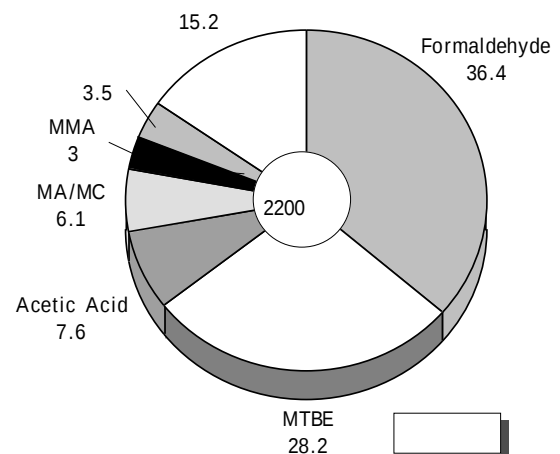
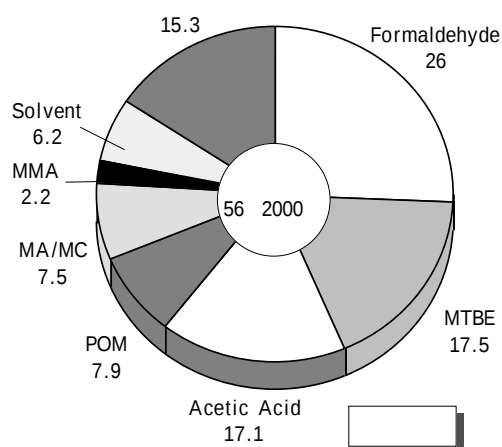
()

(: 1000M/T, %)

	1991	1992		1993		1994		1995		1996		1997	
Formaldehyde	155	155	-	177	14.2	217	22.6	259	19.4	322	24.3	343	6.5
MTBE	50	75	50.0	95	26.7	98	3.2	106	8.2	186	75.5	248	33.3
Acetic Acid	10	92	820.0	94	2.2	95	1.1	120	26.3	148	23.3	148	-
DMT	24	24	-	24	-	24	-	27	12.5	28	3.7	29	3.6
MC/MA	30	45	50.0	50	11.1	54	8.0	54	-	80	48.1	80	-
MMA				6	-	16	166.7	24	50.0	32	33.3	32	-
Methyl Acrylate	9	9	-	9	-	10	11.1	10	-	10	-	10	-
DME	5	5	-	5	-	5	-	5	-	5	-	5	-
	52	54	3.8	63	16.7	69	9.5	73	5.8	79	8.2	82	3.8
	335	459	36.4	523	14.4	588	12.4	678	15.3	890	31.3	977	9.8

(1994)

(: %)



MTBE,

95 26

38% 2000 MTBE가

가 가

MTBE, ETBE, TAME

95 1 「Clean Air Act」 가 MTBE

가 93 MTBE

MTBE , 가 95 10 FCC 10

가 96 FCC 8 , 가 96 FCC 6

96 FCC 6

94 7 300 , C.D TCCH 10

MTBE 14 5000 , 13 5000 28

3000 28 3000

MTBE Isobutylene

가 가 가

가 MTBE

MTBE 가 95 5 308 6 360

(: MTA)

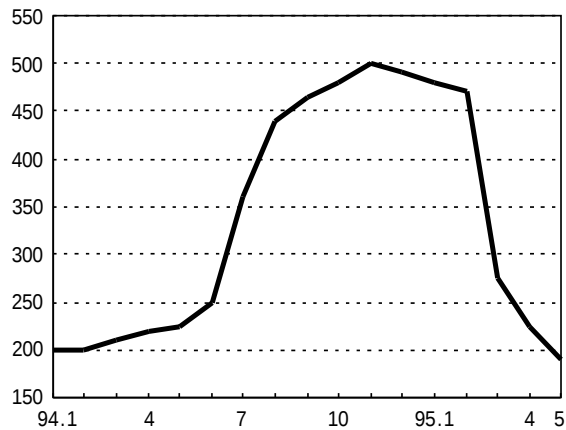
	1993	1994		1995		1996	
	51,000	57,000	11.8	68,000	19.3	68,000	-
	38,000	42,000	10.5	48,000	14.3	48,000	-
	34,000	38,000	11.8	48,000	26.3	57,000	18.8
	32,000	34,000	6.3	34,000	-	34,000	-
	27,000	29,000	7.4	29,000	-	29,000	-
	27,000	29,000	7.4	29,000	-	29,000	-
	21,000	23,000	9.5	23,000	-	23,000	-
	17,000	19,000	11.8	23,000	21.5	23,000	-
	11,000	11,000	-	11,000	-	11,000	-
	-	-		8,000	-	23,000	187.5
	258,000	282,000	9.3	321,000	13.8	345,000	7.5
	27,000	30,000	11.1	36,000	20.0	36,000	-
	20,000	22,000	10.0	25,000	13.6	25,000	-
	18,000	20,000	11.1	25,000	25.0	30,000	20.0
	17,000	18,000	5.9	18,000	-	18,000	-
	14,000	15,000	7.1	15,000	-	15,000	-
	14,000	15,000	7.1	15,000	-	15,000	-
	11,000	12,000	9.0	12,000	-	12,000	-
	9,000	10,000	11.1	12,000	20.0	12,000	-
	6,000	6,000	-	6,000	-	6,000	-
	-	-		4,000	-	12,000	20.0
	136,000	148,000	8.9	168,000	13.5	181,000	7.7

PTA(Terephthalic Acid) VAM · EA · Solvent

가 92 8 94 9 5000 , 95 16 6000 94 74.2%

가 95 가 PTA 25

가 (:) . 96 22



) CRI

5 20
BP

90 7 6000

94

480 94 95 520 92
525 , 530 , 94 520 95
가 550

VAM 38%, Cellulose acetate 17%, Acetate esters 14%, PTA 10%,

21% 가

IPA

(IPA : Isopropyl alcohol) Standard Oil(N,J) 가 가 -

1920

(ICI)

(UOP)

85 ~ 95%

Shell 70 ~ 75%

Distillers

, Esso

가

가

가

65%

25Kg/Cm2

가

가

IPA 93 LG

가
가

93 6 LG 3

IPA

(1994)

(: M/T)

92 3

Shell 1

3000 43%, Exxon 6500 20%,

NPC 4000 13%, UCC 3500 11%,

L.C.Y 1500 5%, 1000

3% Shell Exxon

Shell 89 가

LG

Shell Exxon

LG

29% Shell Exxon

94 71% LG

LG 3
3500

93 6 6 1 3000 9500

LG

가

LG

Shell Exxon

Exxon Shell 1

가 92 3 2000

93 13% 가 3 6000 , 94 4 2000

, 95 4 5000

LG 4000~5000

가

가

IPA가 94 가 400 , 가 42

94 10

가 550 , 가 53 가

95 7

가 700 , 가 67

IPA 가

가

가

가 , IPA 가

가 95 1/4 가

6 C&F 620~630

500

95 1/4 53 9000 94 51 5800 3.5% 가 ,
95 53 1300 94 51 8400 15.8% 가 .

IPA

(: M/T, %)

1991	1992	1993	1994	1995	1996	1997
-	-	- 13,000	- 30,000	130.8 30,000	- 30,000	- 30,000
31,600	33,000	4.4 26,000	21.2 19,000	26.9 18,000	5.3 17,000	5.6 20,000
31,600	33,000	4.4 39,000	18.2 49,000	25.6 48,000	2.0 47,000	2.1 50,000
30,000	31,600	5.3 36,000	13.0 42,000	16.7 45,000	7.1 47,000	4.4 50,000
-	4,700	- 4,700	- 10,000	122.8 8,000	20.0 5,000	37.5 4,000
30,000	36,300	21.0 40,700	12.1 52,000	27.8 53,000	1.9 52,000	1.9 54,000

) CRI

IPA

가

(: 1000M/T, %)

1990	1995
가	가
792 576 73	792 625 79
91 72 79	91 72 79
15 18 120	90 75 83
898 666 74	973 772 79
129 114 88	129 129 100
가 70 30 43	70 70 100
50 36 72	50 38 76
18 18 100	18 18 100
- - -	65 65 100
267 198 74	332 320 96
250 140 56	250 165 66
215 160 74	215 170 79
190 145 76	190 165 87
130 130 100	140 140 100
151 142 94	151 149 99
936 717 77	946 789 83
66 56 85	136 129 95
3 2 67	3 2 67
2,170 1,639 76	2,390 2,012 84

: CRI

IPA

93

. 92

200

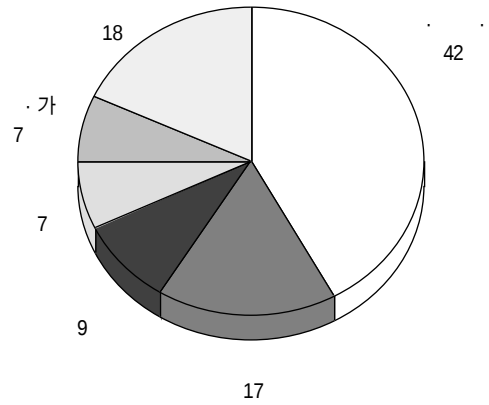
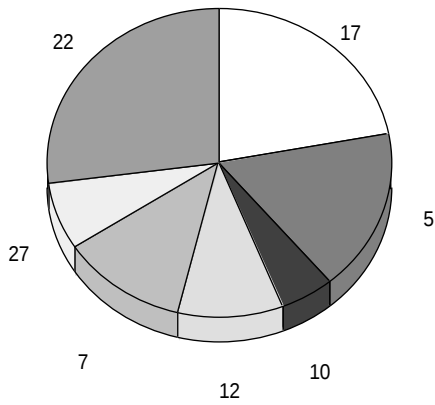
200

, 93

240

210
 Shell 11, 15 5000, 10, 가 7, 2
 3000 13 NPC 9, Tokupama Soda 3 8000, Mitsui Toatsu 3
 3000, L.C.Y 4
 IPA 42%, 17%, 9%, 7%,
 가 7%, 가 18%

IPA () (: %) IPA () (: %)



가 . . .
 PVC 가 가 가
 가 가 . 0.8252(20), -16.7 , 194.5

PVC 가
 6 , 94 19 93 18 12
 14 6
 97 95
 20 14 , 96 21 14
 96 5 ~7 5 LG
 5000
 LG 14 11 가 가
 가 PVC 10% LG 14 24
 10 LG 1000 10

(2-Propyl Heptanol)

LG 96 UCC(Union Carbide Chemicals) DAVY

MCKEE 96 가

가 (DOP) 600

가

LG / 10 가 가

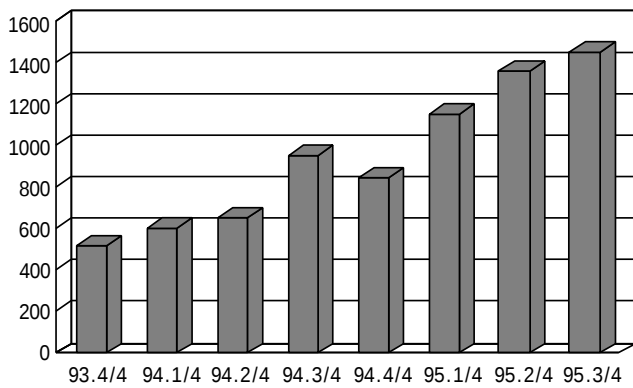
(: M/T,

1992	1993	1994	1995	1996	1997
130,000	140,000	7.7	130,000	7.1	140,000
50,000	70,000	40.0	60,000	-	50,000
180,000	210,000	16.7	190,000	5.3	220,000
170,000	180,000	5.8	185,000	2.7	200,000
3,000	3,500	16.7	4,000	14.3	5,000
173,000	183,500	6.1	189,000	3.0	195,000
21.4	240,000	41.2	10,000	100.0	20,000
13.6	250,000	5.0	100.0	7.7	230,000
9.5					

) CRI

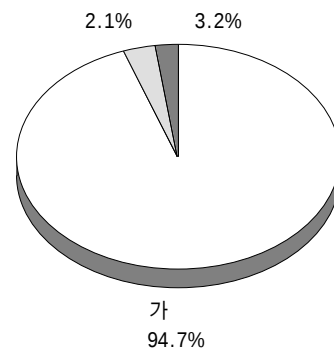
가 (: /M/T)

() (: %)



: CP
: CRI

: 1994
: CRI



LG NCC

가

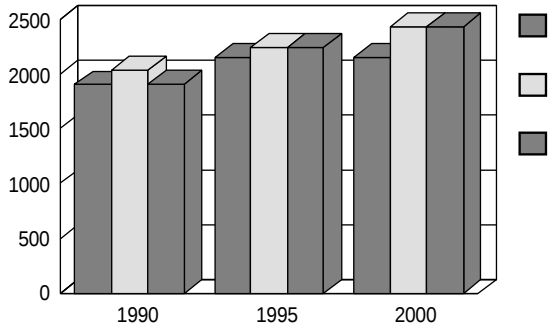
, C4 가가 (INA) 가 (IDA)

94 3 7000 , 95 4 2000 , 96 4 8000 2000 6 8000

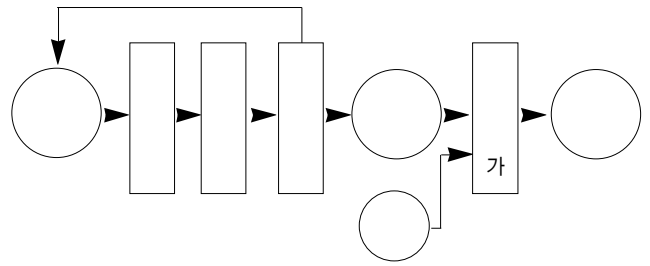
LG 97 가 97

2 , 7 , Hoechst 2 , 4 15 94 가
 가 94 1/4 640 94 7 820
 95 7 1400 96 1000

(: 1000MT) n-



) CRI



n-

n- LG 가
 n- 가
 가 가
 가 10 가

가 가
 (CH₃CHO) (CHCHO+H₂O)
 가 90% 가 95%
 Fe(Co)₅, n- 100 2 4 가 , 15
 1 , 가
 90% , n-
 85 15 가 n-

n- OXO-Process
 OXO-Process LG n- 가

n- 92 LG
, n-

LG 2
OXO- Process

1000

가
LG

n-

가

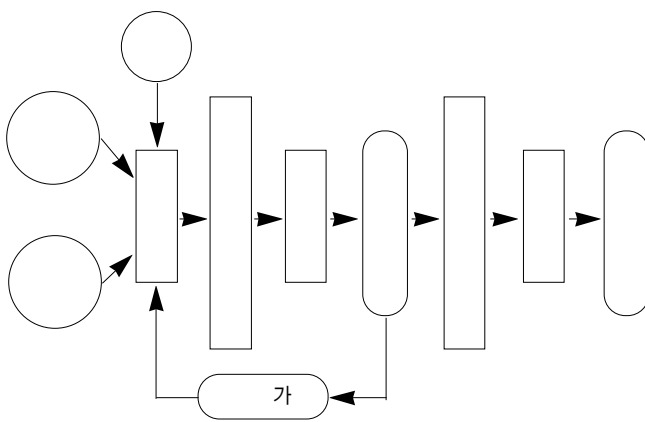
가
가

n-

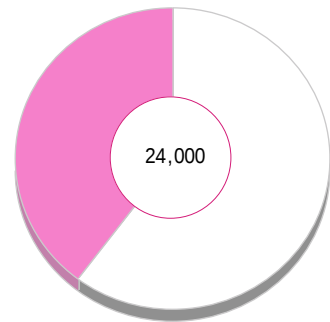
n-

(1994)

(: M/T)



9,500
(39.6%)



14,500
가
가
(60.4%)

, 18 Loss가

7000

n- 91 1 4000
, 가 9500

가 2 4000 가
1 4500 가

가

LG

n-

10

15

5000

가

가

가

n-

가

14

가

LG

10

, n-

가 가

OXO- Process

n-

가

< 1995/9/1 >