

<ETOA>

92 8800 , 2
5 “ ” !

91 Ethanolamine(ETOA) 7800
2 5 93 가

< 1> Ethanolamine (: , %)

		1989	1990		1991		1992		1993	
		-	-	-	-	-	3,000	-	15,000	-
		5,541	7,276	31.3	7,800	7.2	7,000	10.3	5,000	28.6
		5,541	7,276	31.3	7,800	7.2	10,000	28.2	20,000	100.0
		4,772	7,194	50.8	7,755	7.8	8,882	14.5	10,233	15.2
		769	82	-	45	-	1,000	-	3,000	-
		5,541	7,276	31.3	7,800	7.2	9,882	26.7	13,233	33.9

) 91 , 93 100% 가

() Acid-Amine Technologies Chemtech Management
Chisso Basic engineering , Mono Ethanolamine 3000 ,
Diethanolamine 7000 , Triethanolamine 1 2 5
91 가 ,
가

EO EO
1 6500m²
가 EO
ETOA UCC · Texaco · Nippon Shokubai
가

< 2> Ethanolamine (90) (: , %)

	MEA	DEA	TEA		
가	49	910	856	1,815	24.9
	-	853	401	1,254	17.2
	12	48	72	132	1.8
	4	-	643	647	8.9
	1,217	572	1,640	3,429	47.2
	1,281	2,383	3,612	7,276	100.0

, ETOA 2 5 92 9900 가
 Ethanolamine Mono Ethanol amine(MEA), Diethanolamine(DEA), Triethanolamine(TEA) 3
 가 , TEA 99% Chemical 85% Industrial

EO (NH3) MEA · DEA · TEA
 MEA · DEA · TEA , EO Tri, Di
 가

< 3> Ethanolamine 가

		1988	1989	1990	1991	1992	1993
	(1000)	278.3	260.8	288.7	346.4	415.7	498.8
	(%)	30.0	6.3	10.7	20.0	20.0	20.0
E T O A	()	1,624	1,513	1,674	2,009	2,411	2,893
	(%)	29.9	6.8	10.6	20.0	20.0	20.0
	(1000)	100.3	122.7	147.8	177.3	212.8	255.4
	(%)	31.6	22.3	20.5	20.0	20.0	20.0
E T O A	()	1,140	1,399	1,685	2,003	2,426	2,912
	(%)	31.6	22.7	20.4	18.9	21.1	20.0
	(1000)	11.1	12.5	13.7	15.0	16.4	18.0
	(%)	15.4	13.0	9.6	9.5	9.3	9.8
E T O A	()	116	131	144	157	172	189
	(%)	14.9	12.9	9.9	9.0	9.6	9.9
E T O A	()	3,180	2,498	3,773	3,586	3,873	4,239
	(%)	6.9	21.4	51.0	5.0	8.0	9.5
E T O A	()	6,060	5,541	7,276	7,755	8,882	10,233
	(%)	7.6	8.6	31.3	7.8	14.5	15.2

) ETOA , , , .

< 4> Ethanolamine

(: , %)

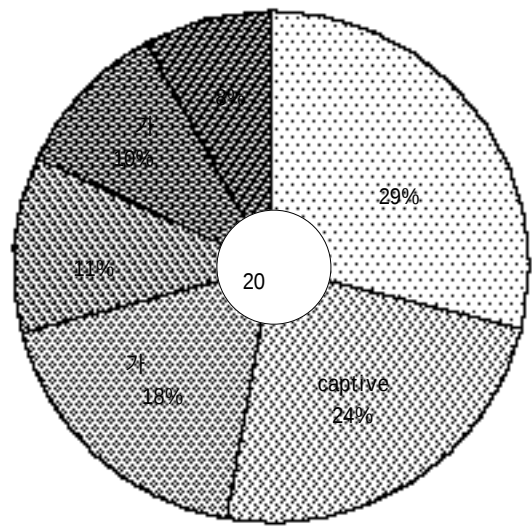
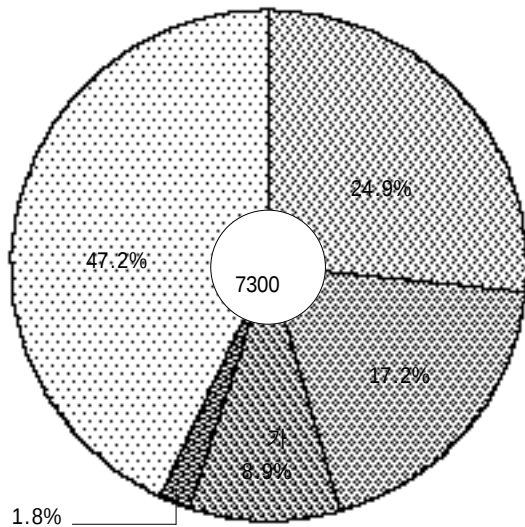
			1988		1989		1990		1991	
Monoethanolamine	99.9% 1.0179	가 . piperazine .	710	10.6	864	15.6	1,281	17.6	978	17.0
Diethanolamine	99% 1.0179	Lauric Acid Amide 가 · Morpholine	1,951	35.9	1,654	29.9	2,383	32.7	1,868	32.6
Triethanolamine	99% 1.1258	. .	2,925	53.5	3,023	54.5	3,612	49.7	2,892	50.4
			6,060	100.0	5,541	100.0	7,276	100.0	5,738	100.0

90 ETOA 7300 , MEA 1281 15.6%, DEA 2382
 32.7%, TEA 3612 49.7% DEA TEA 가
 MEA 49 (3.8%), 12 (0.9%), 가 4 (0.3%),
 1217 (95.0%) MEA 가 ,
 , Piperazine .
 DEA 910 (38.2%), 853 (35.8%), 48 (2.0%), 572

(24.0%)

70%

< > Ethanolamine



) captive:

TEA 856 (23.7%), 401 (11.1%), 72 (2.0%), 가 643 (17.8%), 1640 (45.4%), 가 40%
ETOA 1815 (24.9%), 1254 (17.2%), 132 (1.8%), 가 647 (8.9%), 3429 (47.2%), 가 42.1%

, 1, 20%, ETOA 가 20%, 가 90
ETOA 90 7300 89 31.3%, 91 7800 7.8%, 92 8800 14.5%
ETOA 8%, 11%, 29%, 가 18%, 가 10%, captive 가 24%, 가

93 ETOA 1 3000

Nippon Shokubai 2 가 30%, Texaco Shell UCC가 55%, Mitsui Toatsu 15% EO
가 UCC ETOA 가 35%, 62%, 21%
ETOA UCC
MEA 가 800 950 11 897

UCC
EO

가 가
가

MEA 가 800 UCC .
 , 90 ETOA ,
 EOA PEG ,

< 5> Ethanolamine

(:)

가			
	DOW CHEMICAL	PLAQUEMINE, LA	84,000
	DOW CHEMICAL	MIDLAND, MI	9,000
	OXY-CAIN	BAYPORT, TX	18,000
	TEXACO	PORT NECHES, TX	136,000
	UNION CARBIDE	SEADERIFT, TX	180,000
			427,000
	DOW CHEMICAL	FORT SASKATCHEWAN,	4,000
	UNION CARBIDE	ALB	6,800
		MONTREAL, QUE	10,800
	CANAMEX		1,800
	CHRISTIANSEN	MEXICO CITY	1,400
	IDESA	MEXICO CITY	8,600
	OXITENO	PUEBLA, MEXICO	20,000
	OXITENO	CAMACARI, BRAZIL	3,200
		MAUA, BRAZIL	35,000
	BASF		85,000
	BEROL	LUDWIGSHAFEN, GERMANY	40,000
	BRITISHI PETROLEUM	STENUMGSUND, SWEDEN	27,000
	HUELS	LAVERA, FRANCE	27,000
	ICI	MARL, GERMANY	25,000
		WILTON, U.K.	204,000
	TECH CORP.		1993
	NATIONAL PETRO.	MUSSAYED, IRAQ	1994
		TABIZ, IRAN	
	PRC PRODUCERS		2,300
	ADVANCE PETRO	PRC	900
	AMINES AND PLAST.	AHMEDABAD, INDIA	900
	HICO PRODS	BOMBAY, INDIA	900
	VELV	BOMBAY, INDIA	1,800
	KOREA POLYOL	INDIA	20,000
	MITSUI TOATSU	KOREA	30,000
	NIPPON SHOKUBAI	YOKKAICHA, JAPAN	40,000
			96,800
			773,600

, ETOA 49~54% TEA가

가 84.3% EO 가 63 8200
 가 , 가가 98 2500 , 가

DEA · TEA 85 90

18

UCC

, EO 가 ETOA
가 ,

, 가 ETOA
가 ,

< 1992/3/15>