

미국내 분리막 공정의 시장규모

■ 분리막 공정별 시장 규모

(백만불)

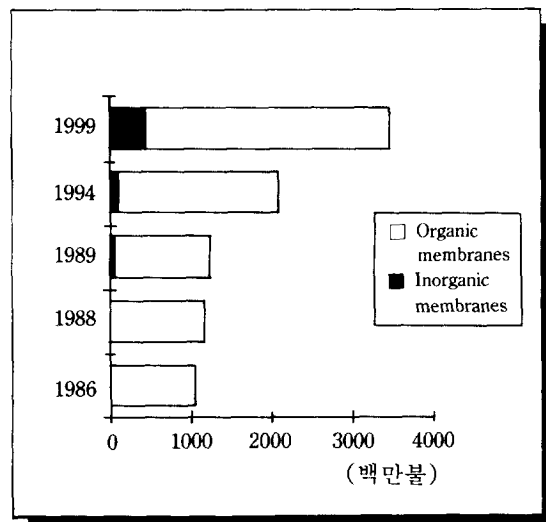
Technology	1986	1991	1996	Average annual growth rate, %/yr. 1986~1996
RO	53	75.5	158	11.5
UF	58	111	257	16
Dia/Hemo	84	84	86	0.2
Gas	12	24	268	36
ED/EDR	15	51.5	179	29
MF	169	272	469	10.7
Total	391	618	1417	13.7

■ 분리막 공정의 응용별 시장 규모

(백만불)

Application	1986	1988	1990	1995	2000	Average annual growth rate, %/yr. 1990~2000
Gas separations	10	31	45	112	278	20
Pervaporation	0	1	1	12	76	54
Electrochemis.	14	20	24	88	120	17
Food/Beverage	47	56	60	74	98	5
Hemodialy./Thera	84	84	84	84	86	0.2
Effluents/Conc.	43	60	65	87	125	7
Semicond./Elect.	57	75	90	165	250	11
Indust./Pharm.	46	56	60	75	95	5
Biotech./Biomed.	72	99	120	198	437	14
Total	373	482	549	895	1565	11

■ 분리막 공정 시장 규모의 성장 추이



■ 정밀여과 공정응용별 시장 규모

(백만불)

Applications	1987	1992	1997	Average annual growth rate, %/yr. 1986~1996
Biotech/Biomedical	46	88	170	14
Ethical Drug/Make-Up Water	45	66	97	8
Semiconductor/Electronic	41	52	73	6
Chemical & Fluid Processes	22	28	45	7.5
Processed Foods & Beverages	21	29	41	7
Environment/Waste Clean-up	9	17	33	14
Total	184	280	459	9.6
Substrates and Supports	330	533	855	10

■ 생물 공정 시스템에서 분리 공정별 시장규모

(백만불)

Type of separations systems	1985	1987	1992	1997	Average annual growth rate, %/yr. 1987~1997
Centrifuges	90	110	160	220	7
Chromatography	65	90	175	545	19
Electrophoresis	27	35	56	90	10
Ultrafiltration	36	56	130	347	20
Affinity	3	12	45	122	26
Microfiltration	36	46	88	170	14
Novel	1	2	4	6	11
Total	258	351	658	1500	15

■ 기체 분리 공정의 시장규모

(백만불)

Market	1987	1988	1993	Average annual growth rate, %/yr. '88~'93	1998	Average annual growth rate, %/yr. '93~'98
Oxygen	116	118	140	3.5	191	6.4
Nitrogen	45	47	85	12.6	211	19.9
Inert gases	9	9	12	5.9	17	7.2
Pervaporation	0	0	3	—	14	36.0
Carbon dioxide	22	23	30	5.5	47	9.4
Hydrogen	50	53	76	7.5	150	14.6
Grand total	242	250	346	6.7	630	12.7

Note : Membrane market includes only membrane modules.

Note : Adsorption market is mainly for pressure swing adsorption (PSA) and does not include adsorption chemicals.

■ 무기 재료막의 시장 규모

(백만불)

Separations appl.	1986	1988	1989	1994	1999	Average annual growth rate, %/yr. 1989~1999
Industrial	5.5	9	11	48	197	33
Gas/PV	1	2	3	12	100	42
Food/Bev.	5	13	14	27	60	15
Biotech.	0.5	2	3	15	75	38
Total separations	12	26	31	102	432	30
Non-sep. applications	0	<1	1	6	114	60
Grand total	12	<27	32	108	546	33

■ 분리막 표면처리 공정별 시장 규모

(백만불)

Technology	1986	1988	1990	1995	2000	Average annual growth rate, %/yr. 1990~2000
Plasma	0	0	0	5	155	>100
Grafting	0	2	14	25	196	30
Affinity	0	7	16	50	200	29
Otherchem./Phy.	0	0	0	50	135	>100
Total	0	9	30	130	686	37
Chem. for Memb. Aff.		3	7	20	80	37

(Reports on the Membranes and Separations Industry by Business Communications Co., Inc., 1990.)

(Membranes for the Nineties by Business Communication Co., Inc., 1990.)

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