

표 1. 혼합냉매 일본특허 현황 (1991 - 1993)

	특허번호	출원인	특 허 내 용	비 고
1	特開平3-170583(1991)	마쓰시다	125 + 143a + 32	(JP013)
2	特開平3-170584(1991)	마쓰시다	23 + 134a + 152a	(JP012)
3	特開平3-170585(1991)	마쓰시다	32 + 125 + 134a	(JP011)
4	特開平3-170586(1991)	마쓰시다	32 + 143a + 134a	(JP010)
5	特開平3-170587(1991)	마쓰시다	32 + 134a + 152a	(JP09)
6	特開平3-170588(1991)	마쓰시다	125 + 143a + 134a	(JP08)
7	特開平3-170589(1991)	마쓰시다	23 + 143a + 152a	(JP07)
8	特開平3-170590(1991)	마쓰시다	125 + 134a + 32	(JP06)
9	特開平3-170591(1991)	마쓰시다	23 + 143a + 134a	(JP05)
10	特開平3-170592(1991)	마쓰시다	32 + 143a + 152a	(JP04)
11	特開平3-170593(1991)	마쓰시다	23 + 125 + 32	(JP03)
12	特開平3-170594(1991)	마쓰시다	23 + 125 + 134a	(JP02)
13	特開平3-172386(1991)	마쓰시다	32 + 125 + 152a	(JP01)
14	特開平3-287688(1991)	Daikin	2 or 3 of (32, 125, 143a, 134a, 152a)	(JP070)
15	特開平4-18484 (1992)	Sanyo	(125 + 134a) + n-C ₅	(JP019)
16	特開平4-18485 (1992)	Sanyo	(125 + 134a) + 600a	(JP018)
17	特開平4-33989 (1992)	Daikin	134 + 143	(JP017)
18	特開平4-139293(1992)	Daikin	134 + 134a	(JP016)
19	特開平4-154887(1992)	Daikin	134 + 152a	(JP015)
20	特開平4-222893(1992)	Daikin	32 + 125	(JP014)
21	特開平5-32961 (1993)	Daikin	23 + (125, 134a, 318)	(JP026)
22	特開平5-32962 (1993)	Daikin	22 + 142b + C318	(JP025)
23	特開平5-70769 (1993)	마쓰시다	32 + 143a	(JP024)
24	特開平5-85967 (1993)	마쓰시다	32 + C218	(JP076')
25	特開平5-117643(1993)	마쓰시다	125 + 290 + 134a	(JP023)
26	特開平5-117645(1993)	마쓰시다	23 + 290 + 134a	(JP022)
27	特開平5-239450(1993)	마쓰시다	(227ea,227ca)+(134a,134)+(32,143a), (227ea,227ca)+32+(143a,125), (227ea, 227ca)+143a+125,(134a,134)+32+(143a, 125), (134a, 134) + 143a + 125	(JP077)
28	特開平5-287263(1993)	Sanyo	23 + 116 + (n-C ₅ , 290)	(JP021)

표 2. 혼합냉매 일본특허 현황 (1993 - 1995)

	특허번호	출원인	특 허 내 용	비 고
29	特開平5-306391(1993)	Dairei	134 + 23	(JP020)
30	特開平6-17039 (1994)		134a + C218 + 290 12대체	(JP078)
31	特開平6-49473 (1994)	旭化成工業	함불소 방향족 화합물 + 불화알칸계	
32	特開平6-65561 (1994)	마쓰시다	23 + 218 + 152a	(JP027)
33	特開平6-122872(1994)	Kanto	32 + 218	(JP028)
34	特開平6-166868(1994)		23 + 134a	(JP079)
35	特開平6-172227(1994)		32 + 125 + 143a	(JP080)
36	特開平6-212148(1994)	Showa Denko	32 + 134a + 218	(JP029)
37	特開平6-220432(1994)	Showa Denko	32 + 134a + C216	(JP030)
38	特開平6-220433(1994)	Showa Denko	32 + 125 + 318	(JP031)
39	特開平6-220434(1994)		SF ₆ + 32 + 134a	
40	特開平6-220435(1994)		744 + 32 + 134a	
41	特開平6-256757(1994)	Daikin	32 + 134a + 125	(JP032)
42	特開平6-281272(1994)		125 + 143a	(JP081)
43	特開平6-340871(1994)		125 + C218 + (1270, 290)	(JP082)
44	特開平7-48562 (1995)		134a + 116	
45	特開平7-48563 (1995)		23 + 116 + 170	
46	特開平7-53419 (1995)		32 + 134a + C218	(JP083)
47	特開平7-62334 (1995)		32 + 134a + 116	
48	特開平7-062335(1995)	Showa Denko	32 + 125 + 218	(JP038)
49	特開平7-062336(1995)	Showa Denko	32 + 125 + C216	(JP037)
50	特開平7-126613(1995)		E125+152a+(E170,E143a,E134a,E152a) 134a대체	
51	特開平7-126676(1995)		32+E125+(E170,E143a, E134a, E152a)	
52	特開平7-126677(1995)		E125 + (E170, E143a, E134a) + (E143a, E134a, E152a)	
53	特開平7-126678(1995)		32 + (E170, E143a, E134a) + (E143a, E134a, E152a)	
54	特開平7-150134(1995)		125 + 250(propylene)	
55	特開平7-173460(1995)	Sanyo	134a + n-C ₅	(JP036)
56	特開平7-173461(1995)	Sanyo	218 + (290, n-C ₅) + 134a	(JP035)

표 3. 혼합냉매 일본특허 현황 (1995 - 1996)

	특허번호	출원인	특 허 내 용	비 고
57	特開平7-216348(1995)	Daikin	32 + 134a + 23	(JP033)
58	特開平7-173462(1995)	Sanyo	143a + 125 + 134a + n-C ₅	(JP034)
59	特開平7-216348(1995)		32 + 134a, 32 + 134a + 23	(JP084)
60	特開平7-252473(1995)	Sanyo	(125, 134a) + n-C ₅	(JP071)
61	特開平7-300579(1995)		125+143a+134+134a, 125+143a+(134a, 134,227ea,C216), 125 + 161 + 134a	(JP085)
62	特開平8-041449(1996)	Tabai Espec	125 + 290	(JP046)
63	特開平8-41475 (1996)	旭化成工業	Fluoroether + 윤활유	
64	特開平8-048971(1996)	Daikin	32+(134a,125)+143a, 134a+(143a,32)+ 152a, 32 + 125 + 134a	(JP047)
65	特開平8-53665 (1996)		32 + 23 + 134a	(JP086)
66	特開平8-67870 (1996)	Daikin	32 + 134a + CO ₂	
67	特開平8-067871(1996)	Tabai Espec	125 + 218	(JP048)
68	特開平8-085783(1996)	Sanyo	R143a(65wt%이하)+RC270(25-80wt%)+R134a(Balance)중 2 or 3가지혼합물	(JP049)
69	特開平8-085784(1996)	Sanyo	32 + RC270 + 134a	(JP050)
70	特開平8-100170(1996)	旭硝子 Asahi Glass	32+(143a,143)+125+(134a,134), R502대 체, 기존특허 혼합냉매 문제점 개선	(JP074)
71	特開平8-105660(1996)	Mitsubishi	C318(30-80%)+32(1-20%)+23(5-30%)+14(5-40%)+CH ₄ (0.5-20%)&냉동장치	
72	特開平8-120260(1996)	Sanyo	32 + 600a, 32 + 600a +134a	(JP051)
73	特開平8-127767(1996)	Sanyo	32 + 318 +134a	(JP052)
74	特開平8-143859(1996)		600 + (1270, 290) + 125 + 14	
75	特開平8-151569(1996)	Sanyo	290 + C270 + 134a	(JP045)
76	特開平8-151570(1996)	Sanyo	152a, 143a, 600a : 2 or 3	(JP075)
77	特開平8-151571(1996)	Sanyo	C270+134a,C270+134a+(600a,152a,218)	(JP072)
78	特開平8-157809(1996)	Asahi Glass	(32, 143a) + 125 + 134a	(JP073)
79	特開平8-157810(1996)	Asahi Glass	32 + 125 + 134a	(JP044)
80	特開平8-165465(1996)	미쓰비시	318+(143a,125,134a) + 23 + 14 + 50	(JP076)
81	特開平8-170073(1996)	Sanyo	C270 + 143a	(JP043)
82	特開平8-170074(1996)	Sanyo	C270 + 125	(JP042)

표 4. 혼합냉매 일본특허현황 (1996)

	특허번호	출원인	특 허 내 용	비 고
83	特開平8-170075(1996)	Sanyo	C270 + 134a + 134	(JP041)
84	特開平8-176536(1996)	Toshiba	290 + 134a + 600	(JP040)
85	特開平8-176537(1996)	Sanyo	218 + C270 + 152a	(JP039)
86	特開平8-218099(1996)		공비혼합조성물 (세정제) CF ₃ CH ₂ OH(9-10%)+CH ₂ Cl ₂ (90-91%)	
87	特開平8-231945(1996)	Sanyo	143a + 152a	(JP053)
88	特開平8-231946(1996)	Sanyo	143a + 152a	(JP054)
89	特開平8-245469(1996)	工業技術院	CF ₂ HO CF ₂ CF ₂ CH ₃ + C ₂ H ₅ OH (공비조성물)	
90	特開平8-245470(1996)	工業技術院	CF ₂ HO CF ₂ CF ₂ CH ₃ + Propanol (공비조성물)	
91	特開平8-245471(1996)	工業技術院	F-Ether + CH ₃ OH (공비조성물)	
92	特開平8-245472(1996)	工業技術院	CF ₂ HO CF ₂ CFHCF ₃ + C ₂ H ₅ OH (공비조성물)	
93	特開平8-245473(1996)	工業技術院	CF ₂ HO CF ₂ CFHCF ₃ + 2-Propanol (공비조성물)	
94	特開平8-259929(1996)	Sanyo	C270 + 32, 152a + C270 + 32	(JP055)
95	特開平8-259930(1996)	工業技術院	Perfluoropropyl methyl ether	
96	特開平8-259995(1996)	工業技術院	용제 조성물, (CHF ₂ CH ₂ CH ₃ , CH ₂ FCF ₂ CH ₂ , CHF ₂ CF ₂ CH ₂ OCH ₃) + Alcohol + 불소계 용제	
97	特開平8-269441(1996)	Sanyo	32 + 290 + 134, 32 + 290	(JP056)
98	特開平8-269442(1996)	工業技術院	CF ₃ CH ₂ OCF ₃ , CF ₂ HCH ₂ OCF ₃	
99	特開平8-269443(1996)	工業技術院	Perfluoroisopropyl methyl ether	
100	特開平8-269444(1996)		E245 + (134a, 152a, 125), R114대체	(JP057)
101	特開平8-277389(1996)	松下電器	CF ₃ I + R32 + R125	
102	特開平8-291283(1996)		32+125+(218, 227ea, 227ca, 245cb, E-143a, E-125)	(JP087)
103	特開平8-291284(1996)		32 + E125 + (143a, 161, 134a, 152a, 134, 227ea, 227ca)	
104	特開平8-311437(1996)	Sanyo	600a + 134a + 152a + 32	(JP058)
105	特開平8-319479(1996)	Daikin	125 + 134a	(JP059)
106	特開平8-319480(1996)	Sanyo	32 + 134a + 143a + 600a	(JP060)

표 5. 혼합냉매 일본특허 현황 (1997 - 1999)

	특허번호	출원인	특 허 내 용	비 고
107	特開平9-025480(1997)	Sanyo	32 + 134a + 125 + 600a	(JP061)
108	特開平9-059609(1997)	松下電器	CF ₃ I + 290 + R600a	
109	特開平9-059610(1997)	Sanyo	227ea + 600a	(JP062)
110	特開平9-059611(1997)	Sanyo	134a + 600a	(JP063)
111	特開平9-059612(1997)	松下電器	CF ₃ I + 32 (+ 152a)	
112	特開平9-111230(1997)	松下電器	CF ₃ I + Propylene(R1270)	
113	特開平9-111231(1997)	松下電器	CF ₃ I + RC270	
114	特開平9-151370(1997)	Asahi Glass	32 + 125	(JP064)
115	特開平9-157641(1997)	Denso	134a + 290	(JP065)
116	特開平9-176625(1997)	Sanyo	125 + 152a + 134a + C270	(JP066)
117	特開平9-202877(1997)		32+125+152a+600a, 32 + (125, 152a) + 600a, 32 + 125 + 152a	(JP088)
118	特開平9-208939(1997)		32 + (C270, 600a, 600)	(JP089)
119	特開平9-208940(1996)	Sanyo	125+143a+134a + (n-C ₅ , i-C ₅ , C-C ₅), 32+125 + 134a + (n-C ₅ , i-C ₅ , C-C ₅)	(JP067)
120	特開平9-208941(1997)	Sanyo	32 + 152a + 125 + C270	(JP068)
121	特開平9-208942(1997)	松下電器	22 + C270	
122	特開平9-221664(1997)	Sanyo	125 + 143a + 134a + C270	(JP069)
123	特開平9-279133(1997)		32 + 134a	(JP090)
124	特開平9-316439(1997)	Daikin	Additive for detecting the leakage of Natural Coolant	
125	特開平10-8084 (1998)	花王(주)	냉동유 + HFC	
126	特開平10-35266(1998)		290 + 600a	(JP091)
127	特開平10-36822(1998)		290 + (600a, 170)	(JP092)
128	特開平10-219237(1998)		32 + 125 + 134a	(JP093)
129	特開平11-80717 (1999)		236ea + E134, 236fa + (E134, 600), 236fa + 600 + (E134, 236ea)	(JP094)
130	特開平11-80718 (1999)		32 + E125 (+125, 143a)	(JP095)
131	特開平11-199861(1999)		32 + 227ea + (600, 600a)	(JP096)
132	特開平11-199862(1999)		152a + 227ea + (600, 600a)	(JP097)
133	特開平11-199863(1999)		152a + CF ₃ I + (600, 600a)	
134	特開平11-228946(1999)		134a + CF ₃ I + (600, 600a)	
135	特開平11-323318(1999)		特開平7-300579와 동일	