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(87)

2002 12 19

(30) 60/297,200 2001 06 08 (US)

(71) 101

(72) , 14206, , 101

, 14085, , 5983

, 14228, , 136

, 14226, , 18

, 14051, , 6202

(74)

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(54) , -

1,1,1,2- , 1,1,1,3,3- -245fa 2- , , 가

2001, 6, 8 가 60/  
297,200

, 1,1,1,3,3- , 2- - .

, , , 가  
(('CFC's') ('HFC's') ('HCFCs'))

CFCs HCFCs

[ ]

1 1,1,1,2- , 1,1,1,3,3- , 2-  
3

CFCs HCFCs 가 ('  
HFC-245fa'), 2- , 1,1,1,2- ('HFC-134a'), 1,1,1,3,3-

CFC's HCFC's (0)  
(('HFC-245fa') 2- 1,1,1,2- , 1,1,1,3,3-  
CFC HCFC

가 가 1 가 1

가 , 가  
 , 1  
 가  
 , A B / 가  
 가  
 1,1,1,2- , 1,1,1,3,3- , 2-  
 , 1,1,1,2- , 1,1,1,3,3-  
 , 2-  
 , HFC-134a 10-98 , HFC-245fa 1-60 , 2- 1-60  
 4.61psia - 25.80 ± 4 , -25.80 ± 2 , -25.80 ± 1  
 가 1 1

[ 1 ]

	( % )	( % )	가 ( % )
HFC-134a	10-98	40-98	80-98
HFC-245fa	60-1	30-1	10-1
2-	60-1	30-1	10-1

CFCs HCFCs

가  
 (closed)

'Polyurethanes Chemistry and Technology,' Volumes I II, Saunders Frisch, John Wiley and Sons, New York, NY

'A'

1



HFC-245fa 0.1-30 %, 2- 9-10 %  
 1 2 3 / - 1

[ 2 ]

134a %	245fa %	2- %	%	14.61psia ( )
100.00	0.00	0.00	0.00	-25.51
98.60	1.64	0.00	0.00	-25.70
92.85	7.15	0.00	0.00	-25.70
92.73	7.14	0.13	0.00	-25.70
92.50	7.12	0.38	0.00	-25.72
92.27	7.10	0.63	0.00	-25.75
92.04	7.09	0.88	0.00	-25.80
91.81	7.07	1.13	0.00	-25.80
91.35	7.03	1.62	0.00	-25.80
90.89	7.00	2.11	0.00	-25.78

1 2

2

100g  
 100g

HFC-134a, HFC-245fa,  
 4,4'

2g

가

152g

3g

380

15g

3

#1  
 ate 2541, Tegostab B8433, Dabco K-15 Polycat 8, Ter  
 2kg 1- 3  
 1500rpm 1- Conn 2' ITC  
 32 70 32oz.  
 . A-

[ 3 ]

(pbw)	
Terate 2541 <sup>1</sup>	100.00
Tegostab B8433 <sup>2</sup>	2.00
Polycat 8 <sup>3</sup>	0.25
Dabco K-15 <sup>3</sup>	2.80

HFC-245fa/HFC-134a/	38.00
Lupranate M70L 4	150.10
	250

1 COSA ; =240

2 GoldschmidtChemical Company

3 Air Products amp; Chemicals Inc.

4 2 ) 40 % ( ( ) ); 가 = 134; BASF C  
orp.

가 Conn 2' 32 , 2 B- 가 32oz. 1000rpm  
가 가 가 30

A- 32 10 , B- 가 3000rpm Conn 2' ITC  
10 8'x8'x4' (cream), (track free time)

24  
2.0 ± 0.1 lb/ft<sup>3</sup>

ASTM C518 k-

(57)

1. 2- , 14.57psia 1-60 %, HFC-245fa 1-60 % 1,1,1,2- 98-10  
% -25.80 ± 4

2. 1 98-40 % 2- 1-30 %, HFC-245fa 1-30 % 1,1,1,2-

3. 1 98-80 % 2- 1-10 %, HFC-245fa 1-10 % 1,1,1,2-

4. 1 -

5. 2 -

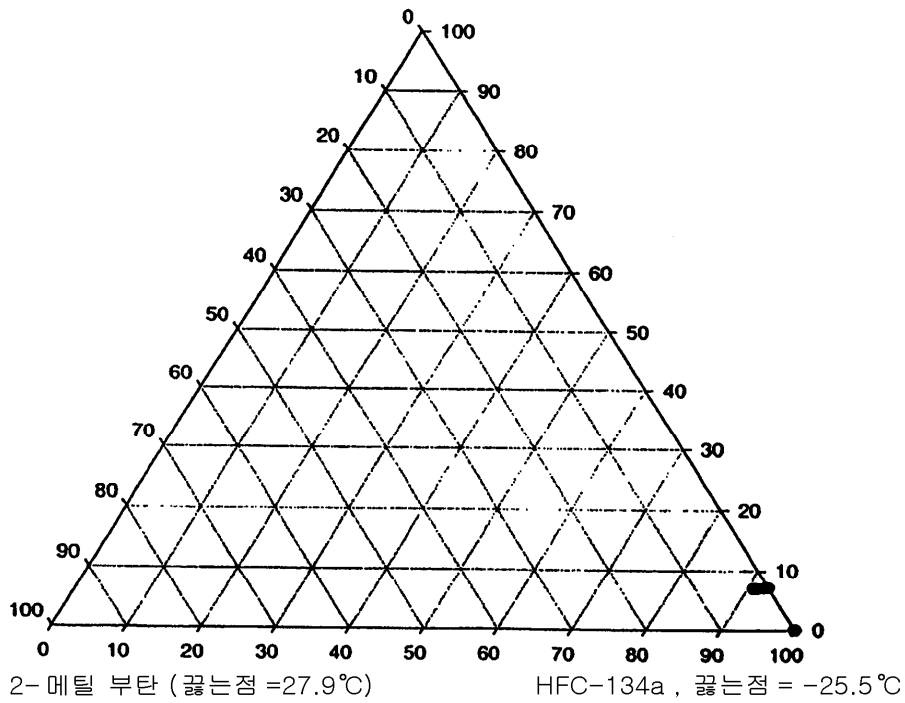
6.

- 3 - .
- 7. 1 .
- 8. 2 .
- 9. 3 .
- 10. 1 - (closed) .
- 11. 2 - .
- 12. 3 - .
- 13. 1 - .
- 14. 2 - .
- 15. 3 - .
- 16. 1 가 .
- 17. 16 , 가 가 .
- 18. 17 , 가 가 .
- 19. 17 , .
- 20. 1,1,1,2- , HFC-245fa 2- 1,1,1,2- , HFC-245fa, 2- 2-  
1,1,1,2- - , 1,1,1,2-
- 21. 20 , 1,1,1,2- 2- 2-

- 22. 4 가 .
- 23. 5 가 .
- 24. 6 가 .

1

끓는점의 3원 상태도  
**HFC-245fa, B.P. = 15 °C**



● 표시된 선에서 14.61psia에서의 끓는점은 -25.6 ~ -25.8 °C이다 .