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(71)		101
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(72)	, 14206, ,	101
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, 14085, ,	5983
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, 14228, ,	136
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, 14226, ,	18
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, 14051, ,	6202
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(74)		
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(54)	, , ,
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1,1,1,2-	, 1,1,1,3,3-	-245fa, 2-
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1,1,1,2-	, 1,1,1,3,3-	-245fa,
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(azeotropic-like)

가
(fractionate)

1

' 가
ling)

(azeotrope-like)'

(constant boi

, A B

/

가

1,1,1,2-

, 1,1,1,3,3-

, 2-

1,1,1,2-

, 1,1,1,3,3-
nts)'

(effective amou

1-50

, HFC-134a 10-97

, HFC-245fa 1-50

, 2-

1-50

14.61psia

-25.80 ± 4

± 2

± 1

[1]

	(%)	(%)	가	(%)
HFC-134a	10-97	40-97	70-97	
HFC-245fa	1-50	1-25	1-10	
2-	1-50	1-25	1-10	
	1-50	1-25	1-10	

CFCs HCFCs
(blowing agent),

(cellular)

가

(closed cell foam)

'Polyurethanes Chemistry and Technology,' Volumes
Frisch, 1962, John Wiley and Sons, New York, NY , Saunders and

1

4a	가	(jacketed)				가	(ebulliometer)가	20g	HFC-13
가	가	, HFC-245fa				가	가	가	2-
1 30	%	HFC-245fa,	1 20	%	4	2-	HFC-134a	HFC-245fa, 2-	0.
		2	4						1

[2]

(134a/245fa 혼합물 92.9:7.1) 총량 %	2-메틸부탄 중량 %	물 중량 %	T(°C)@14.61psia
97.89	2.11	0.00	-25.78
97.50	2.10	0.40	-25.78
97.12	2.09	0.79	-25.78
95.60	2.06	2.34	-25.78
94.12	2.03	3.85	-25.78
92.70	2.00	5.30	-25.78
91.32	1.97	6.71	-25.78
89.97	1.94	8.09	-25.78
88.67	1.91	9.42	-25.78
87.41	1.88	10.71	-25.78

1 2

2

roxyl value) 380	(saccharose),	100g	가	(hyd
3g		100g	2g,	
		HFC-134a, HFC-245fa,		15g
		4,4'-		(rig
id)			152g	

3

#1 (handmixing)

lycat 8	3	, Terate 2541,	, Tegostab B8433	, Dabco K-15	Po
1500rpm	Conn 2'	2kg	1 (gallon)	(can)	
1 -		ITC			
			32		
		32 oz.		A -	70

[3]

(pbw)	#1
Terate 2541 ¹	100.00
Tegostab B8433 ²	2.00
Polycat 8 ³	0.25
Dabco K-13 ³	2.80
HFC-245fa/HFC-134a/ /	38.00
Lupranate M70L ⁴	150.10
	250

¹ COSA : =240

² GoldschmidtChemical Company

³ Air Products and Chemicals Inc.

4 () 40 % 2 (functionality) () ; (equivalent we
ight) = 134; BASF Corp. .

32, 10, B-, 10', 8'x8'x4', 가, 3000rpm, Conn 2', ITC (cream), (in initiation).

24 ,
2.0 \pm 0.1 lb/ft³ ,
k- (factor) ASTM C5

가

1,1,1,2- , 1,1,1,3,3- -245fa, 2-

(57)

1. 1 - 50 %, 2 - 1 - 50 %, HFC-245fa 1 - 50 % 1,1,1,2 -
10 % . 14.61psia -25.80 ± 4 . 97 -

2.

1	,	1-25 97-40	%, 2- %	1-25	%, HFC-245fa	1-25	%	1,1,1,2-
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3.

1	,	1-10 97-70	%, 2- %	1-10	%, HFC-245fa	1-10	%	1,1,1,2-
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4.

1

5.

2

6.

3

7.

1

8.

2

9.

3

10.

1

11.

2

12.

3

13.

1

14.

2

15.

3

16.

1

가

- 17.**
16 , 가 가 .
- 18.**
17 , 가 (cosmetic material) 가 .
- 19.**
17 , (medicinal material) .
- 20.**
1,1,1,2- , HFC-245fa, 2- 1,1,1,2-
1,1,1,2- , HFC-245fa, 2- 1,1,1,2-
1,1,1,2- , HFC-245fa, 2- 1,1,1,2-
1,1,1,2- .
- 21.**
20 , 1,1,1,2- , H
FC-245fa, 2- .
- 22.**
4 가 (cell gas) .
- 23.**
5 가 .
- 24.**
6 가 .

1

끓는점의 3원 상태도
2- 메틸부탄, 끓는점 = 27.9°C

