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EPS가

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Fiber Board,  
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Polystyrene  
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EPS  
가 가  
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가 가

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9 ('97.9.15~17) .1 .2

.1 CFC-11

1986		1995~1997	
	1989.7.1		1999.7.1
75%	1994.1.1	50%	2005.1.1
100%	1996.1.1	85%	2007.1.1
	15%	100%	2010.1.1

.2 HCFC-141b

1989		2015 HCFC	
	HCFC +1989 CFC 2.8%		2016.11
	1996.1.1		2005.1.1
35%	2004.1.1	50%	
85%	2010.1.1		
90%	2015.1.1		
99.5%	2020.1.1		
	A/S		
100%	2030.1.1	100%	2040.1.1

, CFC-11  
HCFC-141b

.3 .

Pentane

가

n-Pentane

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3.

	CFC-11	HCFC-141b	HFC-245fa	C-PENTANE	n-PENTANE
Structure	CCl <sub>3</sub> F	CCl <sub>2</sub> FCH <sub>3</sub>	CF <sub>3</sub> CH <sub>2</sub> CHF <sub>2</sub>	C <sub>5</sub> H <sub>10</sub>	C <sub>5</sub> H <sub>12</sub>
M.wt	137	117	134	70	72
B.P,	23.8	32.1	15.3	49.3	36
Liqide density, g/cc at 20	1.49	1.24	1.32	0.75	0.63
Vapor Pressure at 20	890hpa	695hpa	1267hpa	340hpa	570hpa
ODP	1	0.11	0	0	0
GWP	1	0.12	0.24	<0.001	<0.001
Flash point,	None	None	None	-31	-50
Vapor Thermal conductivity	0.007	0.009	0.011	0.011	0.013
Life time,years	60	8	12.4	few days	few days
S u r f a c e Tension dynes/cm	18.8	19.3	--	21	16.3

, Pentane

가

- Pentane

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- Unit Double Plate Conveyor 가

- Area

n-Pentane , Life Time HFC-141b 가  
 , 가 HCFC-141b .  
 n-PENTANE 3% .  
 가 HCFC-141b .

2.

HCFC-141b  
 HFC-245fa , 가 .  
 HFC-245fa ) HFC-245fa가 (VOC,  
 (GWP), (ODP) , Life Time  
 HFC-245fa ,  
 , 가 .  
 , 가 .  
 , 가 .  
 HFC-245fa ,  
 , Neoprene, EPDM  
 ,Teflon,Nylon Fluorocarbon, Elastomer,Nitrile  
 HFC-245fa 가 .  
 HIPS,ABS  
 .4 .5 HFC-245fa  
 Chemical attack .

.4 HIPS compatibility

	Weigth ,%	Length ,%	Width ,%	Thickness ,%
1	0.19	-0.06	0.15	0.41
2	0.08	-0.05	0.58	0.32
3	0.21	0.03	0.91	0.00
4	0.17	0.12	0.25	-0.26

**.5 ABS compatibility**

	Weigth ,%	Length ,%	Width ,%	Thickness ,%
1	0.10	0.09	0.15	0.13
2	0.21	0.09	0.74	-1.67
3	0.16	0.05	0.74	0.00
4	0.27	-0.05	1.14	0.00

Polyol 가 Polyether Polyol  
 HFC-245fa n-Pentane/Cyclopentane

- Aromatic amine : 55 ~ 60
- Sucrose : 60
- Aromatic polyester : 23 ~ 35

HFC-245fa foam

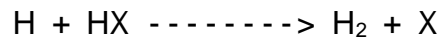
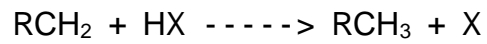
foam cell 가 가 ,

HFC-245fa , HCFC-141b  
 , HFC-245fa가

**6. foam**

	HCFC-141b	HFC-245fa
,% -30		
24hrs	-1.8	-0.17
7days	-3.6	-2.30
,kcal/mhr		
24hrs	0.0176	0.0176
7days	0.0202	0.0189
30days	0.0222	0.0205
Cell	fine	fine





가

가

Free-radical

n-PENTANE

HFC-245fa

가

가

HCFC-141b

n-Pentane

n-PENTANE

7

## 7. Polyurethane

	KS	CFC-11	HCFC-141b	n-PENTANE M-200
,Kcal/mhr	0.021	0.0150	0.0155	0.0185
.Kg/cm <sup>2</sup>	2.5	4.52	4.98	4.12
,Kg/cm <sup>2</sup>	2.0	2.43	2.50	2.31
,g/100cm <sup>2</sup>	3.0	1.51	1.75	2.10
	120 60mm	PASS	PASS	PASS