

(19) (KR)
(12) (B1)

(51) 。 Int. Cl. ⁶ (45) 2001 10 22
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(21) 10 - 1993 - 0001109 (65) 1993 - 0016519
(22) 1993 01 27 (43) 1993 08 26

(30) 825,960 1992 01 27 (US)

(73)
.
(14831)

(72) 가
,14814 , , 273
,01778 , , 20
,14858 , , 322

(74)
:

(54)

가 .
 , 가
- ,
 .
가 .

[]

[]

3 2 가

[]

가 .

가

가

4, 902,324

4,931,076 ,

4,948,2

17

4,943,130

가 (bare) (, (jacket)가) 가

가

• ,

• ,

(housing) (polycarbonate)

,

03	"	"	593,9
(casing)	(bar)	.	(fr
eespace)	(sealing composition) ()	.

eespace)

(sealing composition) (

)

4,707,069

(open channel)

V

.

V

4,906,068

03 - 045911

(anisotropic)

 1×10^{-6} -1

가

(0.18cm).

4,482,203

가

RTV가

(epoxy resin)

01 - 182810

(box)

B.S. Kawasaki, K.O. Hill, R.G. Lamont " Biconical - Taper Single - Mode Fiber Coupler," Optical Society of America(1981), B.S. Kawasaki, M. Kawahi, K.O. Hill D.C Johnson " A Single - Mode - Fiber Coupler with a Variable Coupling Ratio" , Journal of Lightwave Technology, vol. LT - 1, no.1, T. Bricheno A. Fielding " Stable Low - Loss Single - Mode Couplers," Electronics Letters, vol.20, no.6(1984) , 가 ,

Toyobo KK

57 083 553 (WIPO/Derwent

)

(negative)

, 가

가

(bent)

가

(thermal stresses)

가

가

 15×10^{-7} -1
 , - 40 +80

;

- 40 +80

가 30×10^{-7} -1

;

가 , -

80

100

가

, - 40

+80

$15 \times 10^{-7} -1$

$0 \times 10^{-7} -1$

1 (4) , (2, 4)가 (6) (2) (6) ,
(6a, 6c) (6b)

2 (6) (8) ,
(8) (6b) (6)
가 , 4,943,130 가

(moisture barrier) (12) (8) 3 ,
2 (14) ()
12) 3 (6) (8) (12) (14)
, 3 (8) (12) (14)
3 (12)

(8) 가 , -
10~50 % , 1~60 % 5~60 %
가 , 85 %

$\times 10^{-7} -1$ - 40 +80 15
 $0 \times 10^{-7} -1$

1:1 3:1 ()
(source) 1~20 % Li_2O , 5~25 % Al_2O_3 25~85 % SiO_2
 $\text{Li}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot \text{SiO}_2$ - (- spodumene) - (- eucryptite)
ZnO, ZrO_2 , TiO_2 , 가 3.5
% Li_2O , 19.5 % Al_2O_3 , 73 % SiO_2 4 % ZnO - 40 +80
- $12 \times 10^{-7} -1$ - 40 +80 - $7 \times 10^{-7} -1$
2 % Li_2O , 18 % Al_2O_3 , 70 % SiO_2 , 10 % ZnO 6 % ZrO_2
15.56 % Li_2O , 53.125 % Al_2O_3 31.305 % Li_2O -
- 40 +80 - $86 \times 10^{-7} -1$ 가 75 % SiO_2 , 18
% Al_2O_3 , 4 % Li_2O , 4 % ZrO_2 - 40 +80 $0 \times 10^{-7} -1$

$\text{Li}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot \text{SiO}_2$, 40~60 % Al_2O_3 40~60 % TiO_2 $\text{Al}_2\text{O}_3 \cdot \text{TiO}_2$
, 56.06 % Al_2O_3 43.9 % TiO_2 - 40
+80 - $19 \times 10^{-7} -1$

80 , 100
가
가
50 1
 $00 \times 10^{-6} \text{ }^{-1}$
 $5 \times 10^{-7} \text{ }^{-1}$
 $10 \times 10^{-7} \text{ }^{-1}$
 30×10^{-7}
가
가
100poise(10^4 mPas)
 $68 \times 10^{-6} \text{ }^{-1}$
 $50 \times 10^{-6} \text{ }^{-1}$
55
가
가
1000poise(10^5 mPas)
100poise(10^4 mPas)
100
가
가
(8)
(8)
(fibe
r mesh)
nt De Nemours & Co., Wilmington Delaware)
($6.9 \times 10^5 \text{ KPa}$)
50:1
2500:1
(,), 1
00:1 2500:1 가 , 0.64 5.80cm
(8) (12) 가
가
(
(Vectra)(H
osechst - Celanese Corp.)
(Saran))
가 (12) (8) (14)
25 , 0 가
1500 1700
5 50mm
(, 25)
(ground)
(slurry) , 가
90 125 150 5 30 40 80 10
ste)
(
(mesh screen) (Jaws)

(empty) 가 2 (6c)

(Young's modulus) 가 2×10^6 psi

(8) 가

가

가

[1]

Li₂O 4.87%, Al₂O₃ 16.6% SiO₂ 78.4% 1650 가

(seed) No. 43290 (, 6.1

10mm (ground) . 5

가 Occidental Chemical Co.) 5.5

가 1.5 가

15 20 90 (ov

en) (, 5psig) (34.5KPa) 150

- 40 +80 26.9×10^{-7}

[2]

Li₂O 4.4 %, Al₂O₃ 15.15 %, SiO₂ 80.39 %

1 - 40 +80 5.2×10^{-7} /

(loading)

1 2 -

[3]

2(1:1:9 $\text{Li}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot \text{SiO}_2$) 16 1650
 16 1300
 200 (mesh) No. 43290 (
 Occidental Chemical Co.) 가
 가 5:9:4 P55 - S(Union Carbide Corporation)
 (tow)
 75 ~
 95 10 150
 125
 - 40 +85
 0.05 dB

[4]

3 S - (Owens - corning fiberglass Corporation) 가
 ASTM No. D - 696 - 1.2×10^{-6} / 가 ASTM
 No. D - 696 18.6×10^{-6} / , ASTM No. D - 696 - 1.8×1
 0^{-6} /
 가 - 40 +85 0.05 dB 0.07 dB
 0.3dB 가

[5]

Kevlar 49 (Kevlar 49 aramid fibers, E. I. DuPont deNemours & Co., Wilmington, Del
 aware) 3 ASTM No. D - 696
 $- 4.8 \times 10^{-6}$ / 46×10^{-6} /
 0.17dB 가

[6]

DER 332(DowChemical Co., Midland, Michigan) DEH24(
 3 1:0.13
 Dow Chemical)
 (24) 3 100
 0.10dB
 - - 가

[7]

3 , (Hoeschst - Celanese Corp., Summit, New Jersey) (
 Vectra) 2
 6186 SILCONE(General Electric, Co.)
 (tube)

U.V. (Hernon Manufacturing, Sanford, Florida)

- 40 +85
0.30d

0.08dB

B

가 가

(57)

1.

;

, - 40 +80

가 $15 \times 10^{-7} \text{ }^{-1}$

-

;

, - 40 +80

가 $30 \times 10^{-7} \text{ }^{-1}$

가

,

2.

1 , 가 , 가

3.

1 , 가 1~20 % LiO_2 , 5~25 % Al_2O_3 , 25~85 % SiO_2 Li_2
O · Al_2O_3 · SiO_2 - (spodumene), - , -

4.

1 , 가 40~60 % Al_2O_3 40~60 % TiO_2 Al_2O_3 · TiO_2

5.

1 , .

6.

5 ,

7.

6 , , .

8.

1 , 가 , .

9.

1 , .

10.

1 , , , .

11.

1 , - 40 +80 $10 \times 10^{-7}^{-1}$.

12.

1 , 가 .

13.

1 , , , .

14.

1 , 10~50 % , 1~60 % 5~60 % .

15.

; , - 40 +80 가 15
 $\times 10^{-7}^{-1}$ -
 - 40 +80 가 $30 \times 10^{-7}^{-1}$; ,
 ;

;

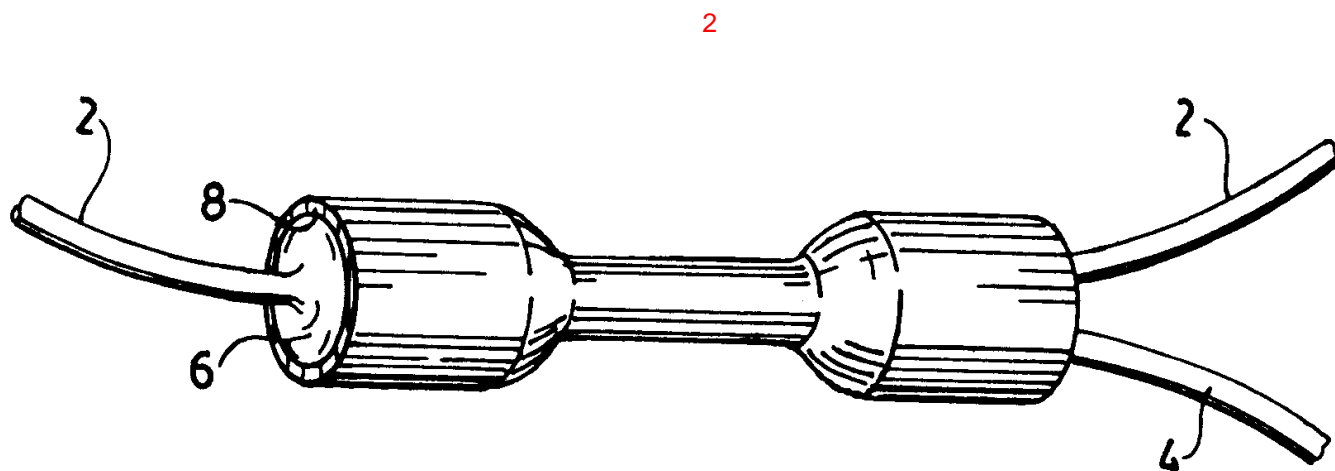
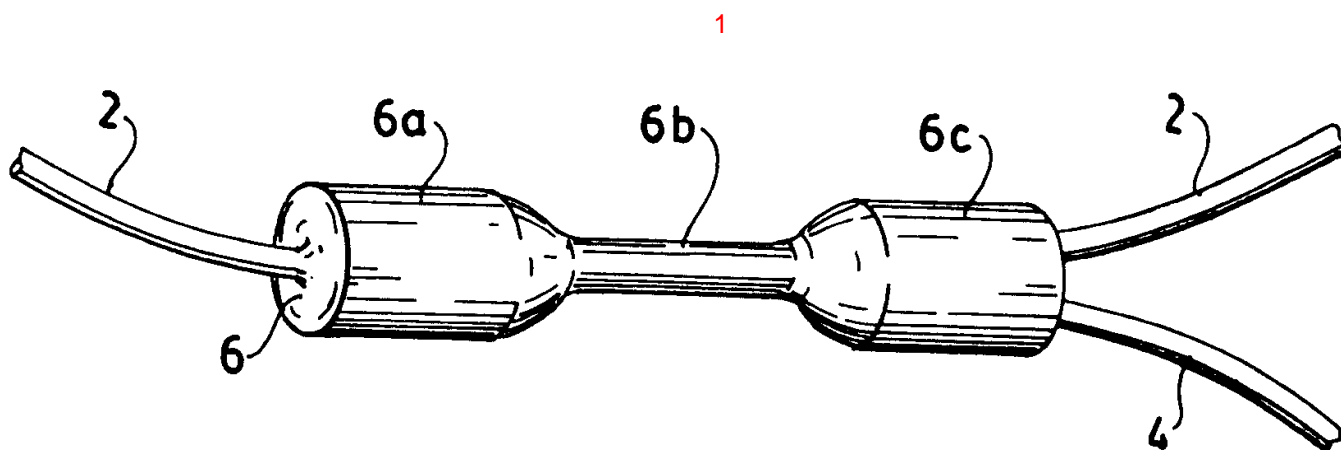
.

16.

15 , , ,

17.

16 , 가 가



3

