

(19)
(12)(KR)
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C07C 69/732(11)
(43)2002 - 0066648
2002 08 21(21) 10 - 2001 - 0006946
(22) 2001 02 13

(71) 134

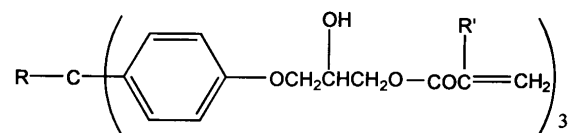
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224

(74)

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(54) 3 ()

3 ()

(1) .
(1)

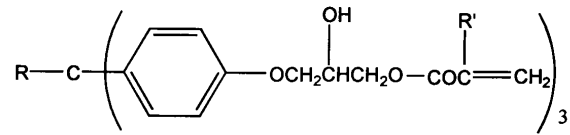
, R , , 2 20 가 , R'

[illegible]

3 ()

(1) 가 .

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, R , , 2 20 가 , R'

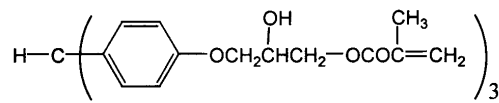
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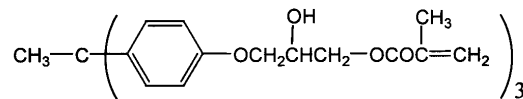
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가 , 3 3

(2)



THMPM



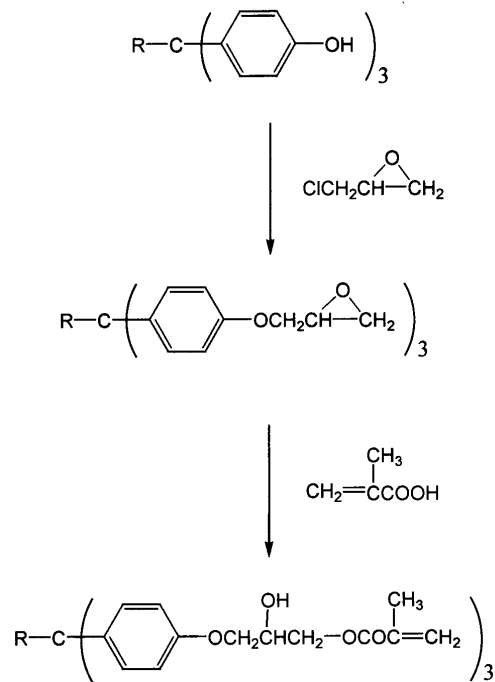
THMPE

I) THMPM THMPE 719 733g/mol , bis - GMA (512g/mol)
UDMA (471g/mol) 가

(1) . R , 2 20 가
, R' 1 3
(epichlorohydrin) 3

3 () 2 () 3
2 2 3

(1)



bis - GMA UDMA

bis - GMA, UDMA
 가
 'TEGDMA'), 2 - ()
 가
 가
 가 ('CQ')

가

('DMAEMA')

N,N - CQ DMAEMA

4 - 가 3 , 3

가

가

가

가

0.0

2 20 가 , , ,

5 85 % ,

가 가 ,

가 ,

50% , bis - GMA UDMA , 40

GMA , 2 , bis -

10% bis - GMA ,

bis - GMA 3

bis - GMA

, 90MPa

< 1 >

[4 - (2 - - 3 -)] (THMPM)

(TPMTGE) 13.00g (28), 7.29g (85),
 (0.052g), (0.10g) 90 9
 가 0.5 , 0.1 ,
 . 가 [4 - (2 -
 - 3 -)] (THMPM) (18.06g, 89%) .H NM
 R (CDCl₃, 300MHz): (ppm) 1.94 (s, 9H), 3.80 - 4.40 (m, 19H), 5.59 (s, 3H), 6.10 (s, 3H), 6.74 - 7.00
 (m, 12H).

< 2>

1,1,1 - [4 - (2 - - 3 -)] (THMPE)
 1,1,1 - [4 -] (10.5g, 34.3), (47.55g, 514) 15
 , (8.22g, 206) 112 3
 (16.44g, 412) 60 가 90 5
 . 가 2
 , 1,1,1, -
 (TPETGE) foam (14.3g, 88%) . T
 PETGE .¹H NMR (300MHz, CDCl₃) (ppm) 2.1 (s, 3H), 2.7 (m, 3
 H), 2.9 (m, 3H), 3.3 (m, 3H), 3.9 (m, 3H), 4.2 (m, 3H), 6.8 (m, 6H), 6.96 (m, 6H).

1,1,1, - (TPETGE) (10g, 21.1) ,
 9.07g (105.4), (0.039g), (0.04g) 90 9
 . 가 0.5M , 0.1M ,
 가
 [4 - (2 - - 3 -)] (THMPE) foam
 (13.2g, 85%) .¹H NMR (CDCl₃, 300MHz): (ppm) 1.96 (s, 9H), 2.1 (s, 3H), 4.01 - 4.40 (m, 15H), 5.62 (s, 3H), 6.15 (s, 3H), 6.78 - 7.00 (m, 12H).

< 3>

, TEGDMA, CQ, DMAEMA 60 : 40 : 1 : 1 NaCl 420 - 500nm 가
 ,
 1609 cm⁻¹ - (1637 cm⁻¹
 1) 3

$$\text{전환율(\%)} = \left(1 - \frac{(\text{C=C 흡수띠면적} / \text{벤젠환 흡수띠면적})_{\text{노광후}}}{(\text{C=C 흡수띠면적} / \text{벤젠환 흡수띠면적})_{\text{노광전}}}\right) \times 100$$

, THMPM THMPE 40 , 40
 48% 47% bis - GMA 48% .

< 4 >

(25ml) . 25 x 2 x 2 mm
 , TEGDMA, CQ, DMAEMA 60 : 40: 1 : 2 , 6
 0 . (%) .
 3 .

$$\text{중합 수축률 (\%)} = \frac{d_{\text{polymer}} - d_{\text{monomer}}}{d_{\text{polymer}}} \times 100$$

THMPM THMPE 가 6.65% 5.63% ,
 bis - GMA , 7.43% .

< 5 >

3
 , TEGDMA, , CQ, DMAEMA 15 : 10 : 75 : 0.25 : 0.5
 25mm x 2mm x 2mm
 가 420 - 500nm 가 60 . (Instron) 0.75 ± 0.
 25mm/min cross - head speed 가 가 load .
 flexural strength MPa . 5 .

= $3F / 2bh^2$ F: 가 load

I: 0.01mm

b: width

h: thickness

, THMPM THMPE 가 90 (12) MPa, 98 (11) MPa
 , bis - GMA가 103 (14) MPa .

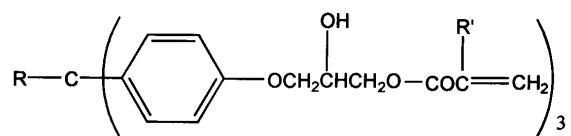
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 , .

(57)

1.

1

(1)



, R , , 2 20 가 , R'

2.

1

,

가

()

(1)

가

,

3.

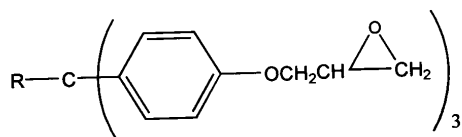
2

,

가

(2)

(2)



, R , , 2 20 가 , R'

4.

1

1

5.

1

1