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2002 04 12

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(72) 109 - 405
101 - 1206

’ , . 30, . 5, . , , 630090.
, , . 103, . 8, . , 630058.

(74)
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(54) / - Ti/V

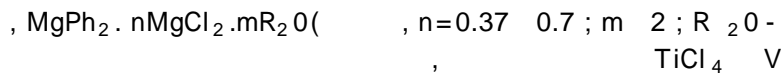
/ - Ti/V .

MgPh₂.nMgCl₂.mR₂O(, n=0.37 0.7 ; m 1 , R₂O= , Ph=)
- 20 80 /Mg 0.5

가

가

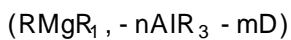
(supported catalyst)



Cl₄ : Ph -)
VOCl₃

(330675/1995).

가



2529207).



(3636060 :



RMgR¹ , tert - BuCl

EP - A - 0, 155,770

가

가

가

가

가

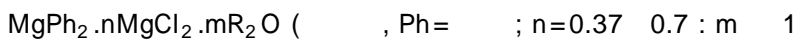
가

가

가

가

: R₂O=)



- 20 80

/Mg 0.5

R² R³가 2 8 R²OR³가
4 5 3 4

CR_hCl_(4-n) (, n 0 3)

R¹ 1 12

[MgPh₂.nMgCl₂.mR₂

이]가 (R₂O)

5 (chlorination)

- 20 80 /Mg 0. 가

5μm 150μm

(80 90wt%), (7 15wt%)

(1 5wt%)
Al/Ti=0.1 2

Al/Ti 0.5 1.5 0 80
AIR_hX_(3-n) 2 12 , X , R¹ 1
, n 0 3

V/Mg=0.01 1.0

V/Ti=0.5 200

20 100

1.2 2

g-

가

$V(OR)_{4-n} X_n$ $VO(OR)_{3-m} X_m$ $Ti(OR)_a \times_{4-a}$
 $COR' (R' \quad 1 \quad 14)$ $COR' (R' \quad 1 \quad 14)$ $COR' (R' \quad 1 \quad 14)$

VO가 1 가 3가 14
 $n \quad 0 \quad 4$ $n \quad 0 \quad 4$ $n \quad 0 \quad 4$

$X \quad Cl, Br, I$ $X \quad Cl, Br, I$ $X \quad Cl, Br, I$

$TiCl_4, Ti(OC_3H_7)_4, Ti(OC_3H_7)_2Cl_2, Ti(OC_3H_7)Cl_3, Ti(OC_3H_7)_3Cl,$
 $Ti(OC_4H_9)_2Cl_2, Ti(OC_4H_9)Cl_3, Ti(OC_4H_9)_3Cl$ 가

$Al/Ti \quad 0.1 \quad 2$

$Al/Ti \quad 0.5 \quad 1.5 \quad 0 \quad 80$

$AlR'_n X_{(3-n)}$ $R' \quad 1$

$n \quad 0 \quad 3$ $n \quad 0 \quad 3$ $n \quad 0 \quad 3$

X

가

$5 \quad 10\mu m \quad 10 \quad 15\mu m$
 $20\mu m \quad 150\mu m$

$Ml_{21.6} / Ml_{2.16} \quad 30$ (melt index ratio) $Ml_{21.6}$
 $6 / Ml_{2.16} \quad 100$

$AlR'_n X_{3-n}$ $R \quad 1 \quad 12$ $n \quad 1$
 $n \quad 1$ $n \quad 1$

(\quad , \quad) $50 \quad 100$
 $60 \quad 120$ $2 \quad 40atm$ 가 $-1, \quad -1,4- \quad -1$

$(5 \quad 90 \quad)$ 가

1

A

2.53g 가 6 (10.44mol) 1799Mℓ 37Mℓ
 가 253.6g (10.44mol) 3183Mℓ (31.32
 mol) 80 100 (,) 10
 12
 MgPh₂.0.49MgCl₂, 2(C₄H₉)₂O (M
 g 1 1.4mol)

B

A 3000Mℓ(4.05mol Mg) 가 , 547Mℓ 547
 Mℓ CCl₄ (5.67mol CCl₄) 60 2 가 60
 , 가 n- 2000Mℓ n- 60 4 , 400g
 가 n-

C

100g 40 2 AlEt₂Cl/Mg=1
 , 300Mℓ n- 4 CCl₄ VCl₄ (가 0.951mo
 I VCl₄ /Mℓ 18.6Mℓ) 60 1 70Mℓ n- 2
 1.2wt% , 20μm 1

OMℓ) 80 2mmol Al(i-Bu)₃ 2 n- (100
 1 7.5atm 910cc(0 , 1)
 1

0.015mmol 109g 가
 1g 2.1kg (MI) 2.16kg 190 0.125g/10min
 21.6kg 2.16kg 110 0.36g/cm³
 SPAN 0.6 450μm

SPAN=(d90 - d10)/d50, d90, d50 d10 90, 50 10wt%가

1

1		Ti/V=0.1 1	TiCl ₄	1		70Mℓ 1	n -	2
2		Ti/V=0.3 1	TiCl ₄	1		70Mℓ 1	n -	2
3		Ti/V=0.5 1	TiCl ₄	1		70Mℓ 1	n -	2
4		Ti/V=0.7 1	TiCl ₄	1		70Mℓ 1	n -	2
5	1	VCl ₄	TiCl ₄	VCl ₄	Ti/V=1.0 1			1
6	4	B Ti 2 mmol Al(i - Bu) ₃	Ti/Mg=1.0 7.5atm 1	Ti	60 0.7wt% n - 4.5atm	1 (1000Mℓ) 80	70Mℓ , 1	n - 2 1
7	1	6	Ti/V=1.0 1	VCl ₄	1		70Mℓ 1	n - 2
8	1		1 -		0.945g/cc	30cc 1 -	1 -	가

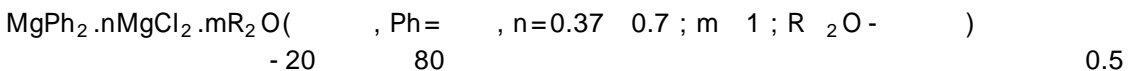
1.

실시예 비교예	V(wt%)	Ti(wt%)	활성	M _{2.16}	M _{21.6} / M _{2.16}	BD(g/cc)	Span ratio
			Kg-PE/ gCat · hr				
비교예 1	1.7	0	2.12	0.125	111	0.37	<0.6
실시예 1	1.27	0.16	5.01	0.013	135	0.32	<0.6
실시예 2	1.32	0.29	4.85	0.018	82	0.31	<0.6
실시예 3	1.33	0.38	5.19	0.012	77	0.32	<0.6
실시예 4	1.1	0.16	3.89	2.86	62	0.32	<0.6
비교예 2	0	0.7	4.4	7.5	27	0.42	<0.6
실시예 5	1.32	0.3	6.97	0.015	109	0.31	<0.6
실시예 6	2.84	0.49	11.42	0.03	92	0.367	<0.6
실시예 7	1.27	0.16	6.52	0.12	125	0.315	<0.6

가 , 가

(57)

1.



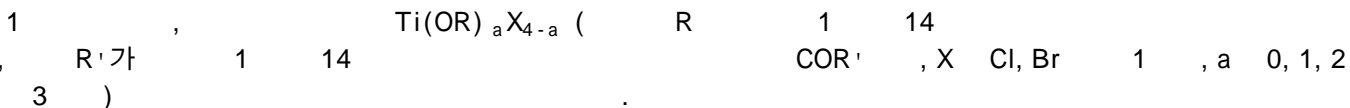
2.



3.



4.



5.



6.

1 , V/Ti 0.5 200 .

7.

1 , .

8.

1 , .

9.

1 , .

10.

1 , .

11.

1 ,
0.1 2 .

Al/Ti