

2002 - 0075451
2002 10 04

WO 2001/64006
2001 09 06

(54)

() 50% , 20,000

(A)

(B) /

(A) () (B) . ,

, , , .

(scale) , (plant)

.

(sludge)

가

($\text{MgNH}_4\text{PO}_4 \cdot 6\text{H}_2\text{O}$) . ,

(pipeline)

, (downstream)

, pH (deposit) 가

, (pipe elbow), (valve),

(centrifuge weir overflow), (pump) 가

,

가 . , , ,

,

() . ,

가 ,

가 { : Nic Booker CSIRO, Molecular Science, entitled, " Struvite formation in wastewater treatments plants: an accident waiting to happen?" }
 가 1
 mg/ 가

, 24

5,352,365

, 2 - - 2 -

pH 2 9 ,

pH 가 가 ,
 () ,
 , ,

가 pH
 ,
 20mg/ 0.25mg/ 가 ,
 가

08 - 099091

/

가 가 .

(A) () , 20,000
 (blend)

(B) /



가

(A)

()

20,000

(B)

(B)] 25 75 % [(A)] 25 75 % , [30 70 %, 가 40 60 % 30 70 %, 가 40 60 %

0%

() 5

가

50 %

() 가 () ()

000

1,500

10,000,

가 GPC
2,000

5,000

20,

20

40%

30

35%

, 2-
, 2000 ppm

10

500

ppm

10

50ppm

/

3

(radical)

70

95

(gel)

가 가

가 가

가

126528

150933

102760

(bead)

가

가 1.5

127388

129329

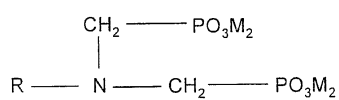
185458

(B)

(A)

I

I



M

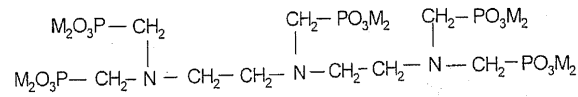
R = H, CH₂CH₂N(CH₂PO₃M₂)₂, -N(CH₂PO₃M₂)CH₂CH₂N(CH₂PO₃M₂)₂ - (CH₂)₆N(CH₂PO₃M₂)₂

()

가

II

11



Solutia) , () (Dequest) ^{RTM} 2066

100ppm 가 .
() mg
5 10ppm , 2 3
ppm , 20 40ppm / , 10 60ppm
5 10ppm

1

(bed)

(pre - screening)

(pumping)

2

가

/

(aeration)(

(pe

(A) 40 % 4,500 5,000(GPC)
48%w/w

(B) 45 49% () 52%

100m 30mg/ ()

330mg/m³ 160mg/m³

2

(nitrifying trickling filter)

2 (tank)

(Bardenpho)

/

1

50mg

(57)

1.

()

(blend)

20,000

(A)

(B)

(an

tiscalent composition) , /

2.

1 , (struvite)

3.

1 2 ,

4.

1 3 , (A) 25 75 % , (B)
25 75 %

5.

1 4 , (A)가 () , ()
() () .

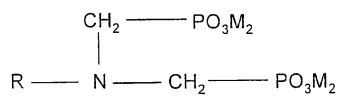
6.

1 5 , 1,500 10,000, 2,000 5,00
0 .

7.

1 6 , (B)가 I .

I



,

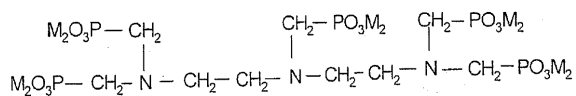
M , ,

R - H, $\text{CH}_2\text{CH}_2\text{N}(\text{CH}_2\text{PO}_3\text{M}_2)_2$, $-\text{N}(\text{CH}_2\text{PO}_3\text{M}_2)\text{CH}_2\text{CH}_2\text{N}(\text{CH}_2\text{PO}_3\text{M}_2)_2$ - $(\text{CH}_2)_6\text{N}(\text{CH}_2\text{PO}_3\text{M}_2)_2$

8.

1 7 , (B)가 II .

II



,

M H, .

9.

1 8 ,

.

10.

1 9 , (A) (B) .

11.

(A) () , 20,000

(B) , .

12.

11 , (A) 25 75 % , (B) 25 75 % .

13.

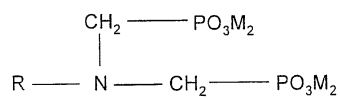
11 12 , (A)가 () , () () () .

14.

11 13 , 1,500 10,000, 2,000 5, 000 .

15.

11 14 , (B)가 I .
I



,

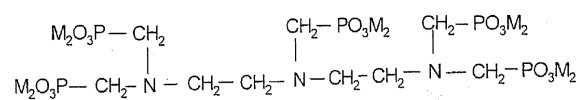
M , ,

R - H, $\text{CH}_2\text{CH}_2\text{N}(\text{CH}_2\text{PO}_3\text{M}_2)_2$, $-\text{N}(\text{CH}_2\text{PO}_3\text{M}_2)\text{CH}_2\text{CH}_2\text{N}(\text{CH}_2\text{PO}_3\text{M}_2)_2$ - $(\text{CH}_2)_6\text{N}(\text{CH}_2\text{PO}_3\text{M}_2)_2$

16.

11 15 , (B)가 II .

II



,

M H,

.

17.

11

16

,

.

18.

11

17

,

(A)

(B)

.