

b b (同族)

lb b

lb b

10 ppm

(流水)

가

가

1

2

3

4

5

가

NO₃⁻

6

1

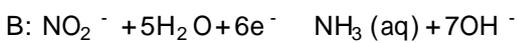
7 2 .
 8 3 .
 9 4 .

(1) 가
 (4) (2) (4) (5) (6) (5) (6) (10)
 (7) (7) (2) (10)
 (2)

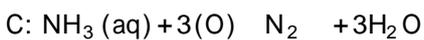
(6) lb b , ,
 (5) , , , , , ,

(5) (6) (5) 2
 (9)가 (9) 가 (6) 가
 (5) (9) (6) (5)
 (9) (10) (5)

(2) (4)
 (7) ON (6) (5) (6)
 (A). (B). A B



(5) (5) (C). C



(2)

3 4 (6) 3
 (6) 3
 KNO₃ 가 300 Mℓ (5) (6) (5) NO₃⁻ 10:1
 0.001 M

3 , (6) lb b , , NO₃⁻ , (6)

lb b , NO₃⁻ NO₂⁻ . (6)

3 , 4 가 . 4 (advan ,

ce) , (6) , NO₃⁻ (6) ,

NO₃⁻ NO₂⁻ NO₃⁻ NO₂⁻ . ,

(6)

가 , NO₃⁻ NO₂⁻

pH , ,

가 ,

(6) NO₃⁻ , ,

(5) , (6)

가 (5) (D) , (6)

D: NO₂⁻ + H₂O NO₃⁻ + H⁺ + 2e⁻

(5) , (6)

(6) (5)

(5) , , (6) , ,

(5) (1) (5) (6) 가 ,

(5) (6) (9)가 , (5) (6) 가 (

6) , (6)

(5) (6) (9) , , (9)

(5) (6) , ,

, (5) 가 (9)

, (5) 가 (10) (6)

(5) (泳動) 가 .

, (9) NO₃⁻ 가 (5) , (6) NO₃⁻ 가 (9)

NO₃⁻ (9)

, 가 , NH₄⁺ ,

, 5 가 가 NO₃⁻ NO₃⁻ 가 , NO₃⁻ 가 .

가 (6) 가 (5)

. 가 ,

, 가 ,

, 10 ppm

, 가 , 가 , 가 , 가

4000 ppm 가 가 , 가

, 가 , (5) (6)

가 (1)

, 1 , 6

BOD 가 (11) (11) COD BOD , COD

(1) (2)

, (11) COD BOD , 가 (1)

(11) (11) (1)

, 2 7 ,

, 3 8
(12) . 가 .

(1) (12) (1) (13) , ,
(12) .

, (12) 가 , (12)
, (12) (1) (1) , (12)
, (12) .

, 4 9 NOx 가
(1) . , NOx 가 , ,

가

lb b

lb b

10 ppm

, 가

COD BOD

COD BOD

(57)

1.

lb b (同族)

2.

가 lb b
가

3.

가 lb b
가

4.

3
10 ppm

5.

1 4

6.

1 5 , ,
가

7.

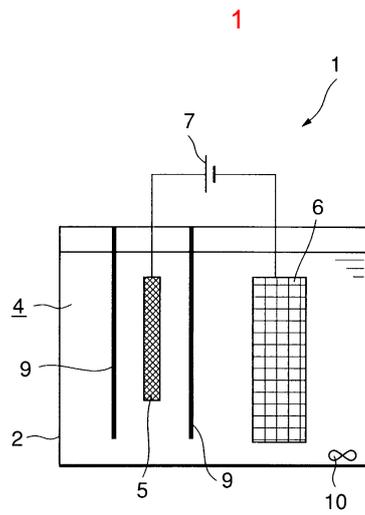
1 , ,

8.

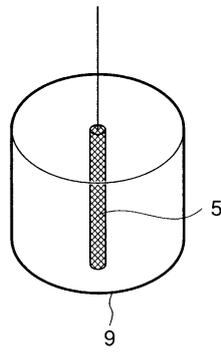
1 7 , 가

9.

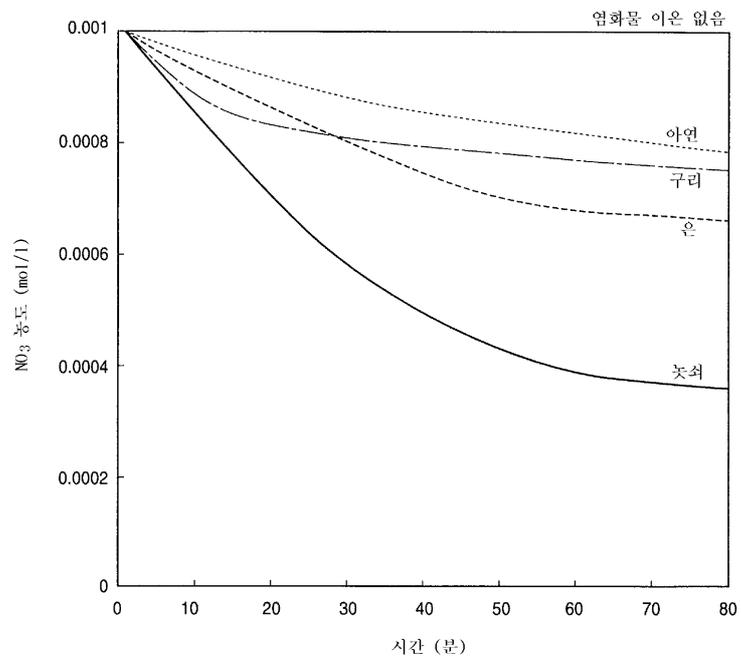
1 7

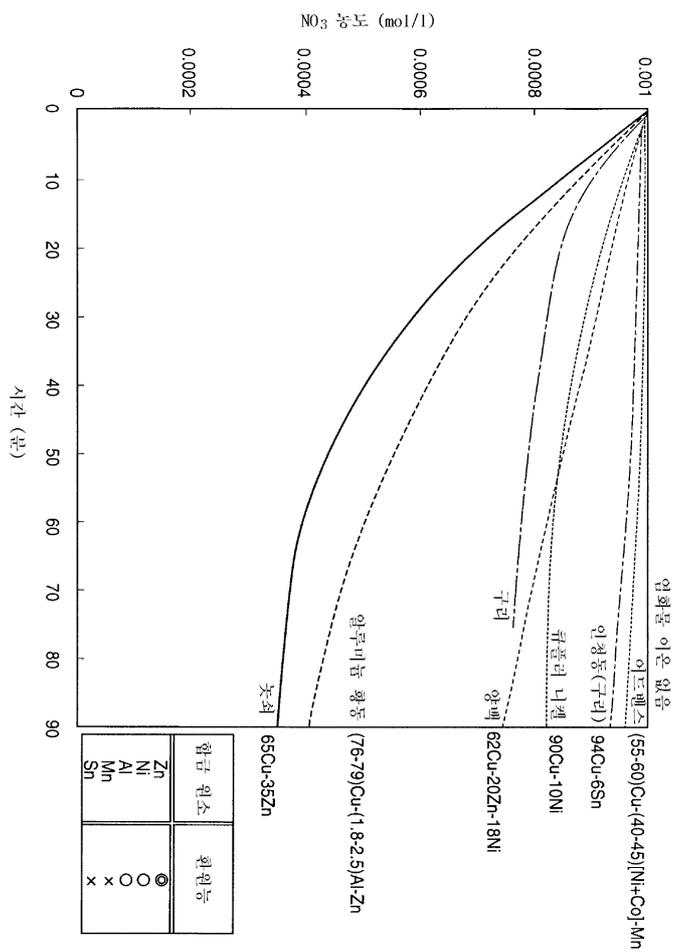


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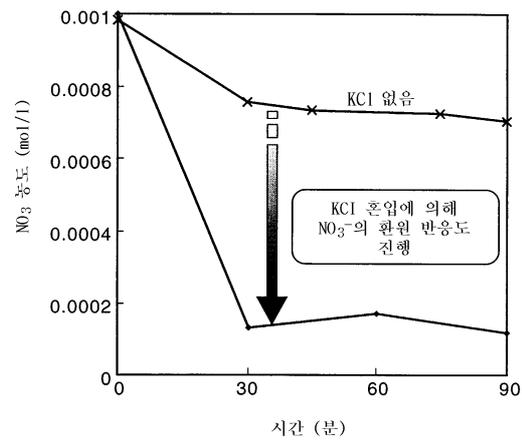


3

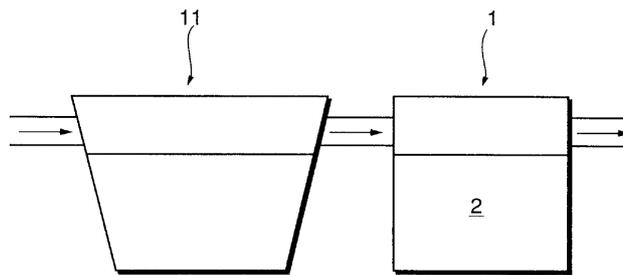




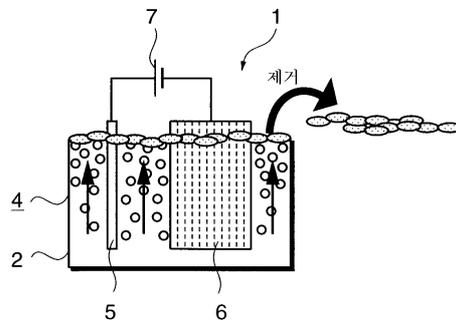
5



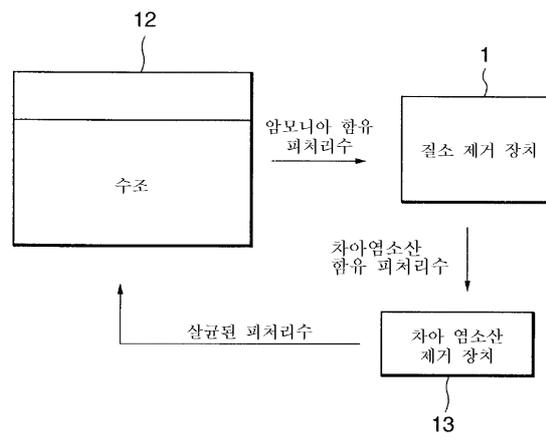
6



7



8



9

