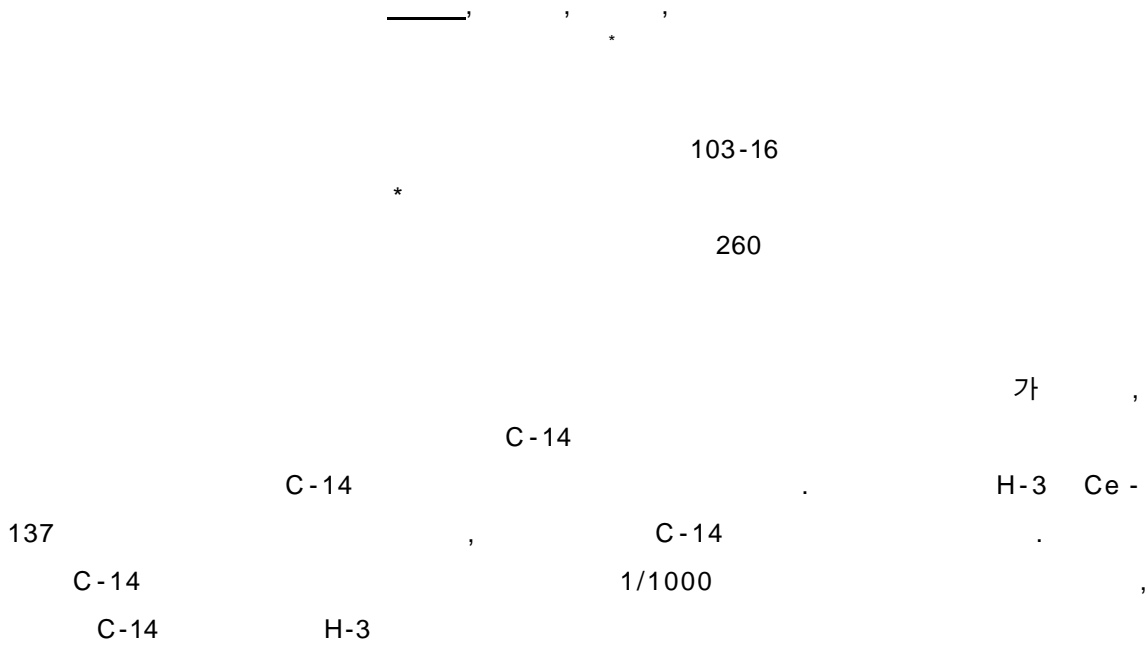


C - 14 가 Assessment of C - 14 Discharge through Liquid Waste of NPP



Abstract

Radioactivity and annual discharge rate of C-14 through the liquid waste of nuclear power plant was investigated using a Carbon sampling kit developed by KEPRI for the analysis of C-14 level of ground water samples near NPP. From the results of periodic samplings and C-14 radioactivity measurements, we realized that the amount of C-14 discharge through the liquid waste is ignorable compared to that through the stack and proportional to H-3 level of liquid waste.

1.

(98-12) C-14
 가 156keV 5,730 . C-14
 가 C-14
 0.25 Bq/gC [2-3]. C-14
 C-14 ,

가 . C-14

[1]. C-14 , 16 가
가 W

C-14 가 C-14
가 W , C-14
가

[4-7].

C-14 , pH

pH가 가 ,
~ 6.5 가 pH 4.5
pH 10.0

C-14

C-14

가

C-14

W

C-14

C-14

C-14

가

2.

[8].

pH 10

, BaCl₂ 가 BaCO₃

pH 4

가

가

NaOH

C-14

가 , Instagel FX

95% CO₂

가 NaOH

20 2,700ppm

[8]. ,

100 가 0.1 CO₂(1g) (1)

[8]. [8]

가

100 가 pH가 1

가 4 /min 2

4N NaOH 600Mℓ가

가 NaOH 1M BaCl₂ 100Mℓ

가 150Mℓ BaCO₃

BaCO₃

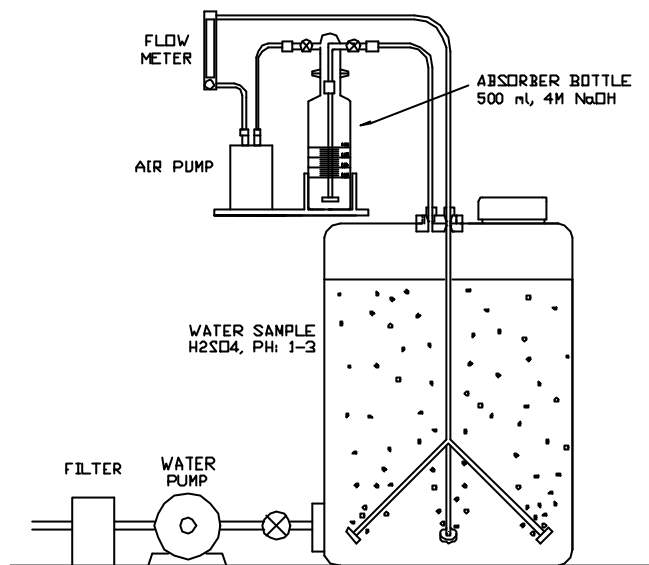
3 가

2 [5,8] 5N 가

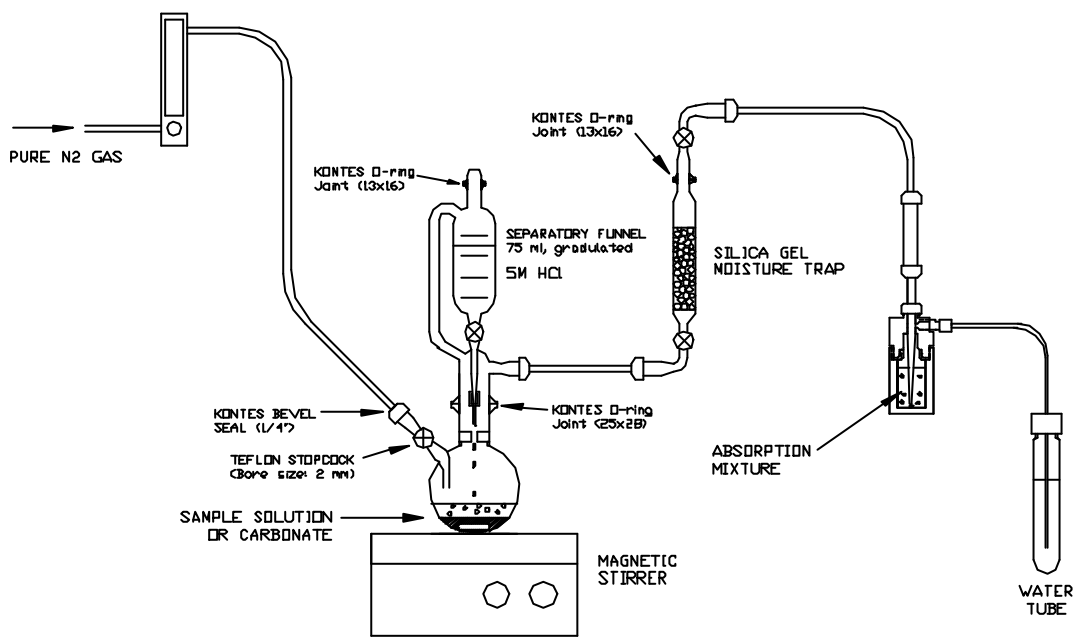
CO₂ Carbosorb E 10Mℓ Permafluor E+ 10

Mℓ가 20Mℓ CO₂ 2.0g

(Quantulas 1220) C-14 ..



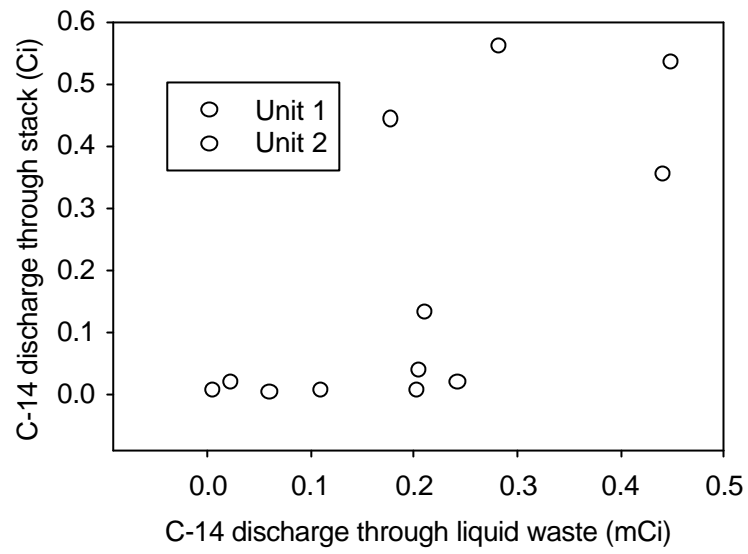
1



2

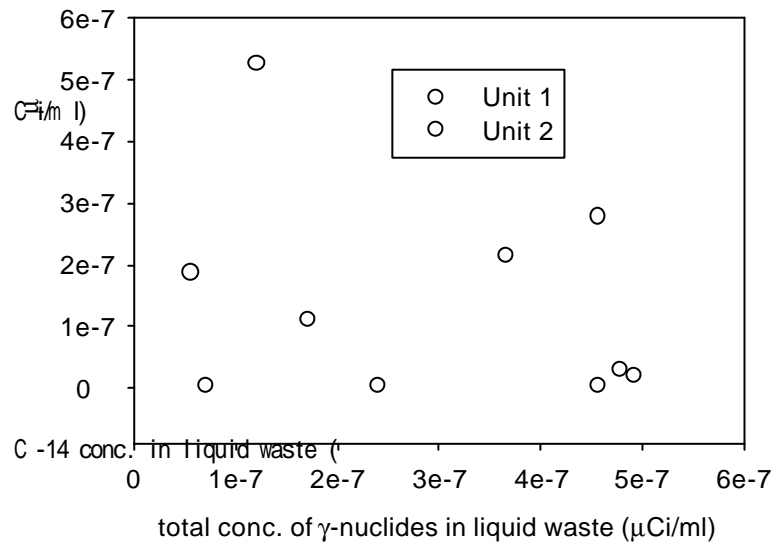
3.

2000 7 2001 1 7 6
 W 5 ,
 20



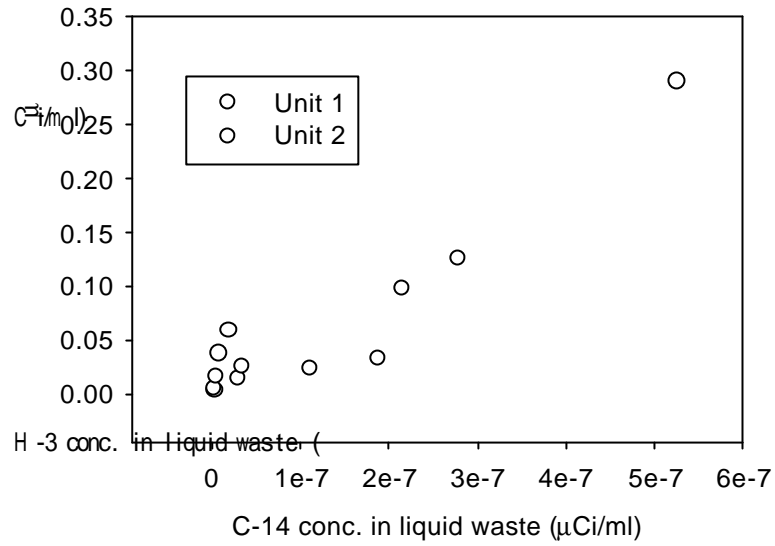
4

C-14



5

C-14



6 C-14 H-3

가 가 6
 C-14 가 H-3
 C-14 H-3 가 1
 가 , C-14 H-3 가
 , C-14
 가

4.

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