HJ

HJ 670-2013

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Water quality-Determination of orthophosphate and total phosphorus-Continuous flow analysis(CFA) and Ammonium molybdate spectrophotometry

2013-10-25 2014-01-01

.....II

1 1

2 1

3 1

4 1

5 2

6 3

7 4

8 4

9 5

10 5

11 6

12 6

13 7

-

2013 10 25

2014 1 1

-

1

-

50mm P 0.01mg/L
0.04~1.00mg/L P 0.01mg/L 0.04~5.00mg/L

2

GB 11893
HJ/T91
HJ/T 164

3

(orthophosphate)

PO_4^{3-} HPO_4^{2-} $H_2PO_4^-$

P

4

4.1

4.2

4.2.1

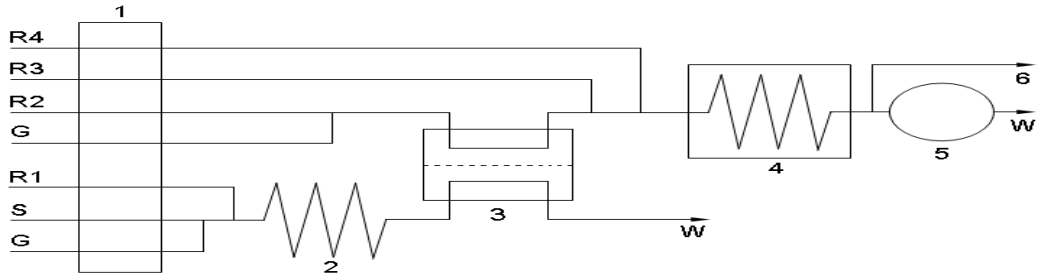
880nm

1

4.2.2

107 ±1

4.2.1 2



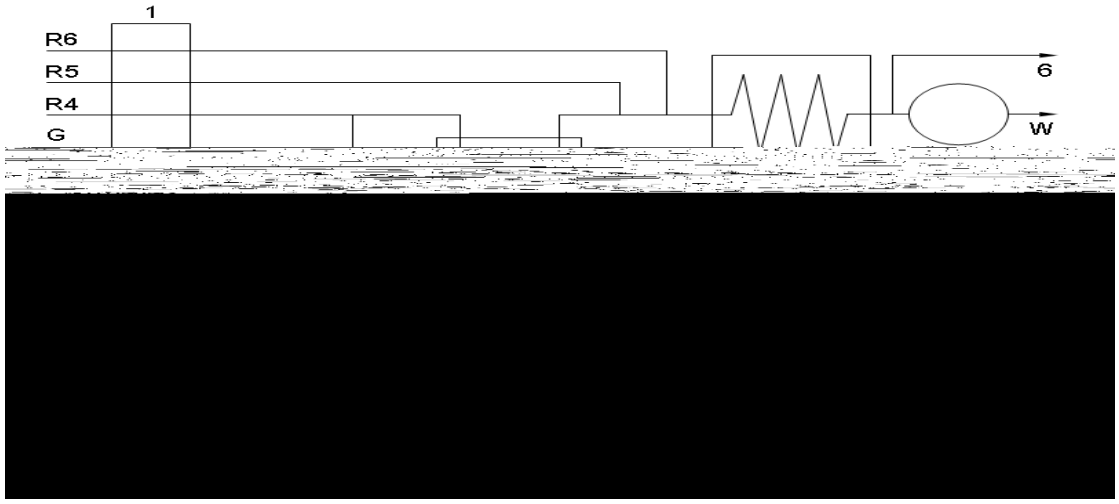
1 2 3 4 40

5 50mm 880nm 6 S 0.8ml/min G

R1 0.32ml/min 6.12 R2 0.80ml/min 6.19 W

R3 0.23ml/min 6.16 R4 0.23ml/min 6.18

1 -



1 2 3 4 107 40

5 6 7 50mm 880nm S 0.80ml/min

R1 0.32ml/min 6.15 R2 0.16ml/min 6.13 G

R3 0.16ml/min 6.14 R4 0.80ml/min 6.19 W

R5 0.23ml/min 6.16 R6 0.23ml/min 6.18 ReS 1.00ml/min

2 -

5

5.1 GB 11893

5.2 1 2 3

5.3

5.4

6

0.5 μS/cm 25

6.1 H_2SO_4 $\rho(H_2SO_4)$=1.84g/ml

6.2 NaOH

6.3 $K_2S_2O_8$

6.4 $(NH_4)_6Mo_7O_{24}\cdot 4H_2O$

6.5 $K(SbO)C_4H_4O_6\cdot ½H_20$

6.6 $C_6H_8O_6$

6.7 KH_2PO_4 105 ±5

6.8 $Na_4P_2O_7\cdot 10H_2O$

6.9 5- $C_8H_{10}NO_6P\cdot H_2O$ 95% 2 ~8

6.10 FFD_6 ω=45~47%

6.11 NaClO 100~140g/L

6.12

14ml 6.1 800ml 2ml FFD_6 6.10 1000ml

6.13

160ml 6.1 800ml 2ml FFD_6 6.10 1000ml

6.14

160g (6.2) 2ml FFD_6 6.10 1000ml

6.15

200ml 6.1 12g 6.3 1000ml 1

6.16

40ml 6.1 800ml 4.8g 6.4 2ml FFD_6 6.10 1000ml 4 1

6.17

0.30g 6.5 80ml 100ml 4 2

6.18

18g 6.6 800ml 20ml 6.17

1000ml 4 7d

6.19

1000ml 2mlFFD$_6$ 6.10 4 7d

6.20 ρ(P)=1000mg/L

6.7 4.394g 1000ml 2.5ml

6.1 4 6

6.21 ρ(P) =100.0mg/L

10.00ml 6.20 100ml

4 3

6.22 ρ(P) =10.0mg/L

10.00ml 6.21 100ml

4 1

6.23 ρ(P) =2.50mg/L

6.20

6.24 ρ(P) =500mg/L

3.600g 6.8 1000ml

4 3

6.25 ρ(P) =2.50mg/L

6.24

6.26 5- ρ(P) =500mg/L

0.8561g 100% 5- 6.9 200ml

4 3

6.27 5- ρ(P) =2.50mg/L

5- 6.26

6.28

6.11 1.3%

7

7.1

50mm

7.2 0.0001g

7.3

8

HJ/T91 HJ/T 164

0-4 24 h

6.1 pH ≤ 2 24h -20 1

≤ 0.1mg/L

9

9.1

20min

9.2~9.4

1

13.7

9.2

9.2.1

6.22

100ml 6 0.00 mg/L 0.05 mg/L 0.10 mg/L

0.25 mg/L 0.50 mg/L 1.00mg/L

6.21 6.22 100ml

6 0.00 mg/L 0.05 mg/L 0.50 mg/L 1.00 mg/L

2.50 mg/L 5.00 mg/L

9.2.2

9.2.1

P

9.3

9.4

9.3

10

10.1

P mg/L 1

$$\rho = \frac{y - a}{b} \times f$$ 1

ρ—— mg/L

y ——

a ——

b ——

f ——

10.2

1.00mg/L 1.00mg/L

11

11.1

6 0.10mg/L 0.50mg/L 0.90mg/L

0.5%~4.1% 0.3%~1.6% 0.4%~2.4%

5.4% 1.2% 1.7% 0.01mg/L 0.02 mg/L 0.03 mg/L

0.02 mg/L 0.02mg/L 0.05mg/L

6 0.50mg/L 2.5 mg/L 4.5mg/

0.8%~3.8% 0.4%~1.9% 0.2%~1.2%

1.8% 3.1% 2.7% 0.03 mg/L 0.08 mg/L 0.09 mg/L

0.04 mg/L 0.23mg/L 0.36mg/L

11.2

11.2.1

6 0.30mg/L±0.02mg/L 0.70 mg/L±0.04mg/L

0.0%~2.7% 0.0%~2.2% 1.3% ± 2.2%

0.9% ± 1.9%

6 0.05mg/L~0.29mg/L 0.21mg/L~0.43 mg/L 0.52mg/L~0.72 mg/L

3 94.5%~109% 99.3%~104%

95.0%~104% 100%±12% 102%±3.6% 99.1%±6.8%

11.2.2

6 0.22 mg/L±0.01mg/L 1.58 mg/L±0.06 mg/L

0.5%~2.3% 0.0%~1.3% 1.2% ± 1.5% 0.5%

± 1.0%

6 0.15mg/L~1.33mg/L 1.15 mg/L~1.61 mg/L 1.97 mg/L~4.16 mg/L

3 96.0%~105% 92.8%~104%

95.6%~103% 100%±6.7% 98.6%±7.9% 100%±5.8%

12

12.1

2

12.2

$\gamma \geq 0.995$

10

≤ 5%

12.3

10% 10

≤ 0.04mg/L ≤ 25%

>0.04mg/L ≤ 10%

12.4

10% 10

80~120%

12.5

6.25 5-

6.27 2 1

9.2 6.25 5-

6.27 6.23 2 R R

90%

$$R = \frac{\rho_1}{\rho_2} \times 100\% \qquad 2$$

R—— %

ρ_1—— 6.25 5- 6.27 mg/L

ρ_2—— 6.23 , mg/L

13

13.1

13.2

± 5

13.3

13.4 30min 6.28

30min 30min

13.5

1 FFD_6 6.10

13.6

13.7

R3 R1

13.8