

	METHODE D'ANALYSE	Identification : INF.EMER.NO3o.01/A	ndice : 1 Page: 1/5
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Rédacteur : S. L.

Vérificateur : 8. M.

Approbateur : P. C.

ALLIANCE METHOOS	
Parameter: Nitrates - Cadmium	Application: Sea water
System: FUTURA'MF)	Range: 48 - 161 µmol 1 L 3 -10 µg/L N03

#### I - OESCRPTION OF THE METHOO :

The nitrates are reduced into nitrites in a copper/cadmium column. Nitrites react with sulfamilamid in acid conditions to give a diazo compound. With N-(1-Naphthyl) ethylen diamin, it be comes a pink coloured complex. Colorimetric mesures are performed at 520/540 nm.

Cadency : 60 to 80 samples 1hour.

#### 11- REAGENTS PREPARATION :

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R1 Arnmonium chloride solution  
Ammonium chloride, NH<sub>4</sub>Cl  
Demineralised water, q.s.

10 g  
1 000 mi

Adjust the pH to 8.5 with ammonium hydroxide, NH<sub>4</sub>OH.

J

R2 Colour reagent  
Sulfamilamid, C<sub>6</sub> H<sub>8</sub> N<sub>2</sub> O<sub>2</sub> S  
Concentrated phosphoric acid, H<sub>3</sub>P<sub>04</sub> 85 %  
N-(1-Naphthyl) ethylen diamin dihydrochlorid, C<sub>12</sub> H<sub>14</sub> N<sub>2</sub>, 2HCl  
Brij-35 (ALLIANCE T21-0110-05)  
Demineralised water, q.s.

20 g  
200 mi  
0.5 g  
1 mi  
2000 mi

Add 200 mi H<sub>3</sub>P<sub>04</sub> to 1 500 mi of D.water. Dissolve 20 g sulfamilamid. Meat if necessary. Add 0.5 g N-(1-Naphthyl) ethylen diamin and dissolve. Complete up to 2000 mi with D.water. Add 1 mi of Brij-35. Stability / Conservatïan : 1 month at 4°C and protected from light.

The cadmium-copper column must be used carefully. The system is run on reagents without the column. Once all reagents are pumped in the analytical circuit, the column is introduced in the circuit without introducing an air buble. At the end af the day, the column is first disconnected and the analytical circuit is then washed. Thus, the calumn remains always in the ammonium chloride solution.

#### Standards preparation ,

Solution 1 000 mg 1l N03

Potassium nitrate, KN03

1.63 g

Demineralised water , q.s.

1 000 mi

Dissolve 1.63 g of potassium nitrate in demineralised water. Add 1 mi of chloroform, CHCl<sub>3</sub>.

Dilute up to 1 000 mi with demineralised water.

Stabilitv / Conservatïon : 1 month at 4oC and protected from light.

Working standard solution : Dilute stock solution in a about 39 *gil* of Na Cl solution or in sea-water without NH<sub>4</sub>.

Made standards according to the range.

Sampler solution : NaCl about 39 *gil* solution

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ALLIANCE METHOOS

Parameter: Phosphates

Application: Sea water, water

System: FUTURA (MF)

Range: 65 - 323 nmol/L  
2-10 µg / l P

I - OESCRPTION OF THE METHOO :

The ammonium molybdate reacts with the orthophosphates in acid condition to form the phosphomolybdic acid. It is reduced in "molybdene blue" by ascorbic acid. The reaction is catalysed by potassium antimony oxide tartrate. Optical density is measured at the wavelength of 880 nm.

II - REAGENTS COMPOSITION :

✓ Sulfuric acid, about 6 N

Sulfuric acid concentrated 95-97 %, H<sub>2</sub>SO<sub>4</sub>  
O.water, q.s.

85 ml  
500 ml

Dissolve 85 ml of concentrated sulfuric acid in 200 ml O.water. Cool, adjust to 500 ml with O.water.

✓ Ammonium heptamolybdate 4 %

Ammonium heptamolybdate tetrahydrate, (NH<sub>4</sub>)<sub>6</sub>Mo<sub>7</sub>O<sub>24</sub> · 4H<sub>2</sub>O  
O.water, q.s.

8 g  
200 ml

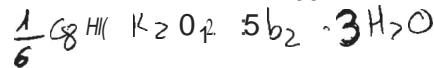
Stability / Conservation : about 3 weeks at 4 °C in an amber plastic container.

J2 Potassium antimony-(III) oxide tartrate 0.3 % 2

Potassium antimony-(III) oxide tartrate hemihydrate K(SbO)<sub>2</sub>C<sub>4</sub>H<sub>4</sub>O<sub>6</sub> · 0,5 H<sub>2</sub>O  
O.water, q.s.

0.3 g  
100 ml

Stability / Conservation : about 3 weeks at 4 °C.



R1 - Ammonium heptamolybdate acid solution

Dissolve :  
- 500 ml sulfuric acid about 6 N  
- 150 ml ammonium heptamolybdate solution 4 %  
- 50 ml potassium antimony oxide tartrate solution 0.3 %  
- 10 ml diluant solution (reagent 3)

Stability / Conservation : about 3 weeks at 4 °C.

✓ R2 - Ascorbic acid solution

Ascorbic acid, C<sub>6</sub>H<sub>8</sub>O<sub>6</sub>  
O.water, q.s.

4.5 g  
250 ml

Dissolve 4.5 g of ascorbic acid in 200 ml of O.water. Adjust to 250 ml with O.water.

Stability / Conservation : about 3 weeks at 4 °C in an amber plastic container.

R3 - SOS Sg/L

Dissolve 5 g dodecylsulfate, sodium salt in 1 000 ml of distilled water.

25 / 250 ml