Operating datasheet PHOTOPOD : numerical photometer

INSTRUCTIONS LIST

I-010 - CYANURIC ACID : 10 - 200 mg/l

Photopod
LS

Reagent kit : 1MT130
Preparation time : ~ 5 min

REAGENTS

Cyanuric Acid Reagent

EQUIPMENT

Graduated Plastic Tube	14TP00
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 30 drops of cyanuric acid reagent
Close and shake vigoroursly.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **010 Cya.Ac. : 10 - 200 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod

SP

I-011 - CYANURIC ACID : 10 - 200 mg/l

Reagent kit : 1MT048
Preparation time : ~ 5 min

REAGENTS

Cyanuric Acid Tablets

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Cyanuric Acid Tablet then wait 2 minutes dissolution
Close the tube and shake vigoroursly for 2 min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 1 minute.
Proceed to the measurement

MEASUREMENT

Select the analysis **011 Cya.Ac. : 10 - 200 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

I-020 - p-Alkalinity TA : 2.0 - 50.0° F

Reagent kit : 1MT134
Preparation time : ~ 6 min

REAGENTS

Alkaphot P Tablets

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Alkaphot P tablet, crush it with the crushing rod and shake till it is dissolved.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 4 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **020 TA : 2.00 - 50.0 °F**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS/SP

I-030 - m-Alkalinity TAC : 2.0 - 50.0 °F

Reagent kit : 1MT135
Preparation time : ~ 5 min

REAGENTS

Alkaphot M Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Alkaphot M tablet, crush it with the crushing rod and shake till it is dissolved.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Tap the tube to remove the bubbles.
Wait 3 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **030 TAC : 2.0 - 50.0 °F**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

I-040 - Aluminum : 0.05 - 3.00 mg/l

Reagent kit: 1MT136
Preparation time: ~ 5 min

REAGENTS

Aluminum buffer Reagent
Aluminum 1 Reagent
Alumimum 2 Reagent

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU013

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in a glass tube
Add 6 drops of Aluminum buffer Reagent
Close and shake.
Add 6 drops of Aluminum 1 Reagent
Close and shake.
Add 12 drops of Aluminum 2 Reagent
Close and shake.
Wait 4 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **040 Al : 0.05 - 3.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
SP

I-041 - Aluminum : 0.20 - 3.00 mg/L Al

Reagent kit : 1MT001
Preparation time : ~ 9 min

REAGENTS

Aluminum Tablets n°1 and n°2
Demineralized water

EQUIPMENT

Graduated Plastic Tube	14TP00 *2
Glass Tube	1CR099
Crushing Rod	1AP018
Syringe 1 ml	1SU010

TEST INSTRUCTIONS

Take a 1 ml sample of water to analyze using the syringe, put it in the graduated plastic tube.
Fill the Tube with demineralized water up to the 10 ml mark.
Put the cap and shake.
Add 1 Aluminum n°1 tablet, crush it with the crushing rod for 2 min and shake till it is dissolved.
After complete dissolution of the tablet N°1, add 1 Aluminum n°2 tablet, crush it with the crushing rod and mix gently to dissolve by turning the tube. Mix by means of the rod to dissolve well the tablet and degas completely the mixture.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes after crushing the Aluminum n°2 tablet (All the bubbles stemming from the effervescence must have disappeared).
Proceed to the measurement.

MEASUREMENT

Select the analysis **041 Al : 0.20 - 3.00 mg/L**
In an other graduated plastic tube introduce 1 ml sample of water to analyze
Fill the Tube to the 10 ml mark with demineralized water.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

NOTA - Interference : Fluoruride and Polyphosphates

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I-042 - Aluminum : 0.02 - 0.30 mg/L Al

Reagent kit : 1MT001
Preparation time: ~ 8 min

REAGENTS

Aluminum Tablets n°1 and n°2

EQUIPMENT

Graduated Plastic Tube	14TP00
Glass Tube	1CR099
Crushing Rod	1AP018

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Aluminum n°1 tablet, crush it with the crushing rod for 2 min and shake till it is dissolved.
After complete dissolution of the pill N°1, add 1 Aluminum n°2 tablet, crush it with the crushing rod and mix gently to dissolve by turning the tube. Mix by means of the rod to dissolve well the tablet and completely degas the mixture.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes after crushing the aluminum n°2 tablet (All the bubbles stemming from the effervescence must have disappeared).
Proceed to the measurement.

NOTA - Interference : Fluoruride and Polyphosphates

MEASUREMENT

Select the analysis **042 Al : 0.02 - 0.30 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

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I-060 – Ammonium : 0.08 - 1.60 mg/l NH_4-N

METHOD COMPATIBLE WITH SEA WATER

Reagent kit: 1MT193 (or 1MT003 for sea water)

Preparation time: ~ 11 min

REAGENTS

Ammonia tablets 1 and 2
Ammonia Conditionning Reagent

EQUIPMENT

Graduated Plastic Tube	14TP00
Glass Tube	1CR099
Crushing Rod	1AP018

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.

If sample is sea water, *add 1 spoonful of Ammonia Conditionning Reagent, shake to dissolve ~1 min.*
If turbidity appears, add 2 other spoonful of Ammonia Conditionning Reagent, shake to dissolve ~2 min.

Add the ammonia tablets 1 and 2, crush them with the crushing rod and shake to dissolve.

Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 10 minutes.
Proceed to measurement

MEASUREMENT

Select the analysis **060 NH_4-N : 0.08 - 1.60 mg/L** *(Result in mg/L of N)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

To obtain the result as mg/L of NH4+, multiply the result by 1,3

NB : If concentration is higher than 2 mg/l, the green color will be too strong and measurement won't be done. In this case, proceed to a dilution of the sample before adding reagents.

I-061 - Ammonium : 0.20 - 4.80 mg/L N-NH_4

Photopod
LS

Reagent kit : 1MT002
Preparation time : ~ 6 min

REAGENTS

Seignette Salt Reagent
Nessler Reagent

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU013

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the glass tube
Add 6 drops of Seignette Salt Reagent
Close and shake.
Add 6 drops of Nessler Reagent
Close and shake.
Wait 5 minutes
Proceed to the measurement

MEASUREMENT

Select the analysis **061 NH_4-N : 0.30 - 4.80 mg/L** *(Result in mg/L of N)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

To obtain the result as mg/L of NH4+, multiply the result by 1,3

I-062 – Ammonium : 0.80 - 24.0 mg/l N-NH_4

Photopod
LS

Reagent kit : 1MT002
Preparation time : ~ 6 min

REAGENTS

Seignette Salt Reagent
Nessler Reagent

EQUIPMENT

Graduated Plastic Tube	14TP00
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 12,5 ml sample of water to analyze in the graduated plastic tube.
Add 8 drops of Seignette Salt
Close the tube and shake.
Add 8 drops of Nessler Reagent
Close the tube and shake.
Wait 5 minutes
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **062 NH_4-N : 1.0 - 24 mg/L** *(Result in mg/L of N)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

To obtain the result as mg/L of NH4+, multiply the result by 1,3

I-063 - Ammonium LR : 0,02-5 mg/L NH_4^+-N

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LS / SP

Reagent Kit : 12AM01
Preparation Time : ~ 6 min

REAGENTS

Ammonia LR NH_4^+ tubes	531130
Vario Ammonia Salicylate F5 Powder Pack	531160
Vario Ammonia Cyanurate F5 Powder pack	531150
Demineralized water	

RECOMMENDED EQUIPMENT

Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU003
24 tubes stand Ø16	1PT013

TEST INSTRUCTIONS

Take 2 Ammonia LR NH_4^+ tubes : one for the blank, the other for the sample.
With the pipette, put 2 ml of demineralized water in the blank tube.
Likewise, put 2 ml of water to analyse in the sample tube.
Add the content of one Vario Ammonia Salicylate F5 Powder pack in each tube then add the content of one Vario Ammonia Cyanurate F5 Powder pack in each tube, close, and shake the tube for 30 seconds.
Wait 10 minutes.
Proceed to the measurement.

MEASUREMENT

Select the analysis **063 NH4-N : 0,02 - 5 mg/L**
Take the tube for the blank and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

To have the result as mg/l NH_4^+, multiply the result by 1,3

INTERFERENCE

For strong alkaline or acidic water, you must adjust the pH at 7 by using hydrochloric acid 1 mol/L(if pH>7) or sodium hydroxide 1 mol/L (if pH<7).
Iron interferes with the test.

I-064 - Ammonium HR : 0,5-50 mg/L NH_4^+-N

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LS / SP

Reagent Kit : 12AM00
Temps de préparation : ~ 6 min

REAGENTS

Ammonia HR NH_4^+ tubes	531140
Vario Ammonia Salicylate F5 Powder Pack	531160
Vario Ammonia Cyanurate F5 Powder pack	531150
Demineralized water	

RECOMMENDED EQUIPMENT

Automatic pipette 0,1 - 1 ml	1PA022
Pipette Tip 0,1 - 1 ml	1EU002
24 tubes stand Ø16	1PT013

TEST INSTRUCTIONS

Take 2 Ammonia HR NH_4^+ tubes : one for the blank, the other for the sample.
With the pipette, put 0,1 ml of demineralized water in the blank tube.
Likewise, put 0,1 ml of water to analyse in the sample tube.
Add the content of one Vario Ammonia Salicylate F5 Powder pack in each tube then add the content of one Vario Ammonia Cyanurate F5 Powder pack in each tube, close, and shake the tube for 30 seconds.
Wait 10 minutes.
Proceed to the measurement.

MEASUREMENT

Select the analysis **064 NH4-N : 0,5 - 50 mg/L**
Take the tube for the blank and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

To have the result as mg/l NH_4^+, multiply the result by 1,3

INTERFERENCE

For strong alkaline or acidic water, you must adjust the pH at 7 by using hydrochloric acid 1 mol/L(if pH>7) or sodium hydroxide 1 mol/L (if pH<7).
Iron interferes with the test.

I-072 - Total Nitrogen LR : 0,3-20 mg/L N

Photopod
LS / SP

Reagents kit reference : 12NT00
Preparation time : ~ 80 min

REAGENTS

Digestion tubes (empty tubes)	
Blank tube (red label)	
Reaction tubes	4190083-0
Digestion Reagent	424408
Compensation Reagent	424409
Nitrate-111	424396

RECOMMENDED EQUIPMENT

Automatic pipette 0,1 - 1 ml	1PA022
Pipette Tip 0,1 - 1 ml	1EU002
Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU003
24 tubes stand Ø16	1PT013
Wooden clamp	1PT007
Heating reactor	1RD010

TEST INSTRUCTIONS

Turn on the heating reactor. Preheat at 100 °C.
Take one Digestion tube.
With the pipette, put 5 ml of water to analyse in the tube.
Add 1 level scoop of No. 8 (black) digestion reagent, close, and shake for 30 seconds.
Put the tube in the reactor for 60 minutes at 100°C.
Remove the tube from the thermoreactor with the wooden clamp. (CAUTION: the tubes are hot!). Place the tube in the tube stand and allow to cool to room temperature.
Add 1 level scoop of No. 4 (white) compensation reagent, close and shake for 30 seconds. This is the pre-traited sample.
Take 1 Reaction tube, and with the pipette, add 0,5 ml of pre-traited sample, close and return several times to mix the content (Caution: tube becomes warm!).
With the pipette, add 0,2 ml of Nitrate-111, close, and shake the tube.
Wait 10 minutes.

MEASUREMENT

Select the analysis **072 N : 0,3-20 mg/L**
Take the tube for the blank (tube with red label) and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

NOTES

This test determines the inorganic compounds Ammonia, Nitrate and Nitrite, as well as organic compounds like amino acid, urea, complexing agents etc. Nitrogen compounds which are hardly to oxidise, as may be found in industrial sewage, are not digested or only partially.

I-073 - Total Nitrogen HR : 3-200 mg/L N

Photopod
LS / SP

Reagents kit reference : 12NT00
Preparation time : ~ 80 min

REAGENTS

Digestion tubes (empty tubes)	
Blank tube (red label)	
Reaction tubes	4190083-0
Digestion Reagent	424408
Compensation Reagent	424409
Nitrate-111	424396
Demineralized water	

RECOMMENDED EQUIPMENT

Automatic pipette 0,1 - 1 ml	1PA022
Pipette Tip 0,1 - 1 ml	1EU002
Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU003
24 tubes stand Ø16	1PT013
Wooden clamp	1PT007
Heating reactor	1RD010

TEST INSTRUCTION

Turn on the heating reactor. Preheat to 100 °C.
Take one Digestion tubes.
With the pipette, put 0,5 ml of water to analyse and, with the pipette 4.5 ml of demineralized water in the tube.
Add 1 level scoop of No. 8 (black) digestion reagent, close, and shake for 30 seconds.
Put the tube in the reactor for 60 minutes at 100°C.
Remove the tube from the thermoreactor with wooden clamp. (CAUTION: the tubes are hot!).
Place the tube in the tube stand and allow to cool to room temperature.
Add 1 level scoop of No. 4 (white) compensation reagent, close and shake for 30 seconds. This is the pre-traited sample.
Take 1 reaction tube, and with the pipette, add 0,5 ml of pre-traited sample, close and return several times to mix the content (Caution: Tube becomes warm!).
With the pipette, add 0,2 ml of Nitrate-111, close, and mix the tube.
Wait 10 minutes.

MEASUREMENT

Select the analysis **073 N : 3-200 mg/L**
Take the tube for the blank (tube with red label) and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

NOTES

This test determines the inorganic compounds Ammonia, Nitrate and Nitrite, as well as organic compounds like amino acid, urea, complexing agents etc. Nitrogen compounds which are hardly to oxidise, as may be found in industrial sewage, are not digested or only partially.

Photopod
LS

I-080 - Benzotriazole : 1.00 - 16.0 mg/L

Reagent kit: 1MT078
Preparation time: ~ 5.5 min

REAGENTS

Triazole Reagent

EQUIPMENT

Graduated Glass Flask 125 ml	1FG000
UV Lamp+ UV Protection Googles	14LU01
UV Protection Googles	FHA2113400
Glass Tube	1CR099

TEST INSTRUCTIONS

Caution : the lamp produces UV rays hazardous to eyes and skin.
Wear UV protection googles when the light is on.

Avoid touching the surface of the quartz of the lamp. Wipe the lamp after each use.
Take a 25 ml sample of water to analyze in the graduated glass flask.
Add 20 drops of Triazole Reagent (1RT018) and shake.
Put the UV glasses on.
Introduce the UV lamp in the flask and put it on for 5 minutes then turn it off.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement.

MEASUREMENT

Select the analysis **080 BZT : 1.00- 16.0 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

NOTA
To check that the lamp works correctly, take a solution at 5,0 mg/l of benzotriazole and make an analysis. If the result is below 5,0 mg/l, then change the lamp.

I-101 - Bromine : 1.00 - 13.5 mg/L Br_2

Reagent kit : 1MT138
Preparation time : ~ 7 min

REAGENTS

DPD 1 Tablet
DPD Glycine Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Total bromine test

Take a 12,5 ml sample of water to analyze in the graduated plastic tube.
In the presence of chlorine: Add 1 DPD Glycine tablet, crush it with the crushing rod and stir with the rod to dissolve.
Add 1 DPD 1 tablet, crush it with the crushing rod and stir with the rod to dissolve.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes after crushing the tablet.
Proceed to the measurement

MEASUREMENT

Select the analysis **101 Br_2 : 1.00 - 13.5 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

I-102 - Bromine : 0.10 - 2.25 mg /L Br_2

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LS/SP

Reagent kit : 1MT138
Preparation time : ~ 4 min

REAGENTS

DPD 1 Tablet
DPD Glycine Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Total bromine test

Take a 20 ml sample of water to analyze in the graduated plastic tube.
In the presence of chlorine: Add 1 DPD Glycine tablet, crush it with the crushing rod and stir with the rod to dissolve .
Add 1 DPD 1 tablet, crush it and stir with the rod to dissolve.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 2 minutes after crushing the tablet.
Proceed to the measurement

MEASUREMENT

Select the analysis **102 Br_2 : 0.10 - 2.25 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
SP

I-110 - Calcium : 20 - 200 mg/l $CaCO_3$

Reagent kit : 1MT139
Preparation time : ~ 4 min

REAGENTS

Calcicol 1 Tablet
Calcicol 2 Tablet
Demineralized water

EQUIPMENT

Graduated Plastic Tube	14TP00 x 2
Crushing Rod	1AP018
Glass Tube	1CR099
pH indicator 0 - 14	1PI030
Syringe 1 ml	1SU010

TEST INSTRUCTIONS

Take 1 ml sample of water to analyze using the syringe, put it in the graduated plastic tube.
Fill the Tube to the 10 ml mark with Demineralized water.
Put the cap and shake.
Check with the pH indicator test strip that the pH is between 4 and 10 otherwise ajust it.
Add 1 Calcicol 1 tablet, crush it with crushing rod and stir until dissolved ~ 30s
Add 1 Calcicol 2 tablet, crush it with crushing rod and stir until dissolved ~ 30s
Wait 2 minutes.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT
Select the analysis **110 Ca : 20 - 200 mg/L $CaCO_3$**
In a graduated plastic tube, introduce a 1 ml sample of water to analyze
Fill the tube to the 10 ml mark with Demineralized water.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

NOTA : Concentration Ca mg/L= reading x 0.4

Interference : Mg < 200 mg/L : nothing
Iron > 10 mg/L : concentration lower
Zinc > 5 mg/L : concentration higher

I-111 - Calcium : 2.0 - 20.0 mg/l $CaCO_3$

Photopod
SP

Reagent kit : 1MT139
Preparation time : ~ 3 min

REAGENTS

Calcicol 1 Tablet
Calcicol 2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099
pH indicator pH 0 - 14	1PI030

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Check with the pH indicator test strip that the pH is between 4 and 10 otherwise ajust it.
Add 1 Calcicol 1 tablet, crush it with crushing rod and stir until dissolved ~ 30s
Add 1 Calcicol 2 tablet, crush it with crushing rod and stir until dissolved ~ 30s
Wait 2 minutes.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **111 Ca. : 2.0 - 20.0 mg/L $CaCO_3$**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

NOTA : Concentration Ca mg/L= reading x 0.4

Interference : Mg < 200 mg/L : nothing
Iron > 10 mg/L : concentration lower
Zinc > 5 mg/L : concentration higher

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LS / SP

I-121 - Free chlorine and total chlorine : 0.50 - 6.00 mg/L Cl_2

Reagent kit : 1MT140 and 1MT192
Preparation time : ~ 7 min

REAGENTS

DPD 1 Tablet (Free chlorine)
DPD 4 Tabet (total chlorine)

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Free chlorine test

Take a 12,5 ml sample of water to analyze in the graduated plastic tube.
Add 1 DPD 1 tablet, crush it and shake to dissolve
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes.
Proceed to the measurement.

Total chlorine test

Take a 12,5 ml sample of water to analyze in the graduated plastic tube.
Add 1 DPD 4 tablet, crush it and shake to dissolve
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes.
Proceed to the measurement.

MEASUREMENT

Select the analysis **121 Cl_2 : 0.50 - 6.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS / SP

I-122 - Free chlorine and total chlorine : 0.05 - 1.00 mg /L

Reagent kit : 1MT140 and 1MT192
Preparation time : ~ 4 min

REAGENTS

DPD 1 Tablets (free chlorine)
DPD 4 Tablets (total chlorine)

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Free chlorine test

Take a 20 ml sample of water to analyze in the graduated plastic tube.
Add 1 DPD 1 tablet, crush it and shake to dissolve
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 2 minutes.
Proceed to the measurement.

Total chlorine test

Take a 20 ml sample of water to analyze in the graduated plastic tube.
Add 1 DPD 4 tablet, crush it and shake to dissolve
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 2 minutes.
Proceed to the measurement.

MEASUREMENT

Select the analysis **122 Cl_2 : 0.05 - 1.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS

I-130 - Chloride : 10 - 500 mg/L Cl^-

Reagent kit : 1MT044
Preparation time : ~ 5 min

REAGENTS

Chloride Reagent 1
Chloride Reagent 2
Demineralized water

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU013
Syringe 1 ml	1SU010

TEST INSTRUCTIONS

With the 10 ml syringe, introduce 9 ml of demineralized water in a glass tube
With a 1 ml syringe, introduce a 1 ml sample of water to analyze in the glass tube
Close the tube and shake.
Add 16 drops of Chloride Reagent 1
Close the tube and shake.
Add 16 drops of Chloride Reagent 2
Close the tube and shake.
Wait 3 minutes, invert the tube once every minute to homogenize.
Proceed to the measurement.

MEASUREMENT

Select the analysis **130 Cl^- : 10 - 500 mg/L**
With the 10 ml syringe, introduce 9 ml of demineralized water in another glass tube
With the 1 ml syringe, introduce a 1 ml sample of water to analyze in the glass tube, put the cap, shake it and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

NOTA : Concentration in French degrees (°F) = reading x 0.14

Photopod
LS

I-131 - Chloride : 1.0 - 50.0 mg/L Cl^-

Reagent kit : 1MT044
Preparation time : ~ 4 min

REAGENTS

Chloride Reagent 1
Chloride Reagent 2

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU013

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the glass tube
Close glass tube and shake.
Add 16 drops of Chloride Reagent 1
Close glass tube and shake.
Add 16 drops of Chloride Reagent 2
Close glass tube and shake.
Wait 3 minutes, invert the tube once every minute to homogenize.
Proceed to the measurement.

MEASUREMENT

Select the analysis **131 Cl^- : 1.0 - 50.0 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

NOTA : Concentration in French degrees (°F) = reading x 0.14

Photopod
SP

I-132 - Chloride : 5 - 200 mg/L Cl^-

Reagent kit : 1MT141
Preparation time : ~ 5 min

REAGENTS

acidifying CD tablet
Chloridol tablet
Demineralized water

EQUIPMENT

Graduated Plastic Tube	14TP00 *2
Crushing Rod	1AP018
Glass Tube	1CR099
Syringe 1 ml	1SU010

TEST INSTRUCTIONS

Take a 1 ml sample of water to analyze using the 1ml syringe, put it in the graduated plastic tube. Fill the Tube up to the 10 ml mark with Demineralized water.
Close the tube and shake.
Add 1 acidifying CD tablet, crush it with the crushing rod and shake till it is dissolved ~ 1 min
Add 1 Chloridol tablet, wait 2 minutes, then crush it with the crushing rod and shake till it is dissolved ~ 30 s
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **132 Cl^- : 5 - 200 mg/L**
In the graduated plastic tube introduce 1 ml sample of water to analyze
Fill the Tube to the 10 ml mark with Demineralized water.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

NOTA : Concentration in French degrees (°F) = reading x 0.14

Photopod

SP

I-133 - Chloride : 0.50 - 20.0 mg/L Cl^-

Reagent kit : 1MT141
Preparation time : ~ 4 min

REAGENTS
acidifying CD tablet
Chloridol tablet
Demineralized water

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 acidifying CD tablet, crush it with the crushing rod and shake till it is dissolved ~ 1 min
Add 1 Chloridol tablet, wait 2 minutes, then crush it with the crushing rod and shake till it is dissolved ~ 30 s
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **133 Cl^- : 0.50 - 20.0 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

NOTA : Concentration in French degrees (°F) = reading x 0.14

Photopod
LS

I-140 - Chromium VI: 0.10 - 4.00 mg/L Cr^{6}

Reagent kit : 1MT180
Preparation time : ~ 1.5 min

REAGENTS

Chromium 1 Reagent
Chromium 2 Reagent
Sodium Fluoride Reagent

EQUIPMENT

Glass Tube	1CR099
Syringe 5 ml	1SU012

TEST INSTRUCTIONS

With the syringue, take a 5 ml sample of water to analyze in the glass tube.
If water contains more than 1 mg/L of iron, eliminate it adding 3 drops of Sodium Fluoride
Add 4 drops of Chromium reagent 1 and shake.
Add 5 drops of Chromium reagent 2 and shake.
Wait 1 minute.
Proceed to the measurement.

MEASUREMENT

Select the analysis **140 Cr6 : 0.10 - 4.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

NOTA Chromium VI in mg/l CrO_4^{2-} = reading x 2,23

Photopod

SP

I-141 - Chromium VI: 0.05 - 2.00 mg/L Cr^6

Reagent kit : 1MT142
Preparation time : ~ 6 min

REAGENTS

Chromicol 1 tablet
Chromicol 2 tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Chromicol 1 tablet, crush it with the crushing rod and shake till it is dissolved ~ 30s
Add 1 Chromicol 2 tablet, crush it with the crushing rod and shake till it is dissolved ~ 30s
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **141 Cr6 : 0,05 - 2,00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

INTERFERENCES

Dissolved iron concentration greater than 1 mg / L will give lower results in chrome.
To increase sensitivity then add 2 chromicol 1 tablet and 1 chromicol 2 tablet.
The TEST INSTRUCTIONS may not be applied if the sample matrix contains tannin.

Photopod
LS

I-150 - Free Copper : 0.05 - 5.0 mg/L Cu

Reagent kit: 1MT181
Preparation time: ~ 3.5 min

REAGENTS

Copper 1 Reagent
Copper 2 Reagent

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU013

TEST INSTRUCTIONS

MEASUREMENT

With the syringe, take a 10 ml sample of water to analyze and introduce in a glass tube
Add 5 drops of Copper 1 Reagent
Close and shake
Add 5 drops of Copper 2 Reagent
Close and shake
Wait 3 minutes
Proceed to the measurement

MEASUREMENT

Select the analysis **150 Cu : 0.05 - 5.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
SP

I-151 - Free Copper, Total Copper and Copper chelated : 0,20 - 5,00 mg/L Cu

Reagent kit : 1MT011
Preparation time : ~ 6 min

REAGENTS

Copper n°1 Tablet
Copper n°2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Free Copper

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Copper n°1 tablet. Crush it with the crushing rod and shake to dissolve. ~30 s
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes after crushing the tablet.
Proceed to the measurement.

Total Copper

Transfer the content of the glass tube in the graduated plastic tube.
Add 1 Copper n°2 tablet. Crush it with the crushing rod and shake to dissolve.~15 s
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement.

Chelated Copper

Chelated Copper = Total Copper - Free Copper

MEASUREMENT

Select the analysis **151 Cu : 0.20 - 5.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

I-160 - Cyanide : 0,02 - 0,50 mg/L CN^-

Reagent kit : 1MT012
Preparation time : ~ 11 min

REAGENTS

Cyanide n°1 Reagent
Cyanide n°2 Reagent
Cyanide n°3 Reagent
Cyanide buffer Reagent

EQUIPMENT

Graduated Plastic Tube	14TP00
Plastic spoon	1J0000
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyse in the graduated plastic tube.
Add 4 drops of Cyanide buffer Reagent and shake
Add 4 drops of Cyanide n°1 Reagent and shake
Wait 1 minute.
Add 1 plastic spoon to the brim of Cyanide n°2 Reagent and shake
Wait 2 minutes.
Add 16 drops of Cyanide n°3 Reagent and shake
Wait 7 minutes.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement.

MEASUREMENT

Select the analysis **160 CN- : 0,02 - 0,50 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

I-174 - COD HR : 0,5 - 15 g/L O_2 (500 - 15000 mg/L O_2)

Photopod
LS / SP

Reagents kit reference : 12DC02
Preparation time : ~ 2h30

ATTENTION : The tubes contains sulfuric acid <90% (corrosive) and potassium dichromate < 0,5% (toxic). Before starting measure, please read MSDS.

REAGENTS

Reaction tubes	424438
Demineralized water	

RECOMMENDED EQUIPMENT

Automatic pipette 0,1 - 1 ml	1PA022
Pipette Tip 0,1 - 1 ml	1EU002
24 tubes stand Ø16	1PT013
Wooden clamp	1PT007
Heating reactor	1RD010

TEST INSTRUCTIONS

Turn on the heating reactor. Preheat to 150 °C.
Take 2 tubes: one for the blank and one for the sample.
With the pipette, put 0,2 ml of demineralized water in the tube for the blank, close and shake gently the tube. Likewise, put 0,2 ml of water to analyze in the tube for the sample.

Be carreful, the reaction is exothermic and the tube becomes hot.

Put the tubes in the heating reactor at 150°C during 120 minutes.
After 120 minutes, take the tubes with the wooden clamp (be carreful, they are very hot) and shake gently. Put the tube in the tube stand et let cool to room temperature (>20 minutes).

MEASUREMENT

Select the analysis **174 DCO : 0,5-15g/L**
Take the tube for the blank tube and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

INTERFERENCES

Suspended solids in the tube lead to incorrect measurements. For this reason it is important to place the tubes carefully in the sample chamber. The precipitate at the bottom of the sample should be not suspended. Samples can be measured when the Chloride content does not exceed 1000 mg/l.

If the sample are COD < 1g/L, we advise to do measure with kit COD MR for a best precision.
If the sample are COD < 0,1g/L, we advise to do measure with kit COD LR for a best precision.

I-175 - COD MR : 50 - 1500 mg/L O_2

Photopod
LS / SP

Reagents kit reference : 12DC01
Preparation time : ~ 2h30

ATTENTION : The tubes contains sulfuric acid <90% (corrosive) and potassium dichromate < 0,5% (toxic). Before starting measure, please read MSDS.

REAGENTS

Reaction tubes	424434
Demineralized water	

RECOMMENDED EQUIPMENT

Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU003
24 tubes stand Ø16	1PT013
Wooden clamp	1PT007
Heating reactor	1RD010

TEST INSTRUCTIONS

Turn on the heating reactor. Preheat to 150 °C.
Take 2 tubes: one for the blank and one for the sample.
With the pipette, put 2 ml of demineralized water in the tube for the blank, close and shake gently the tube. Likewise, put 2 ml of water to analyze in the tube for the sample.

Be carreful, the reaction is exothermic and the tube becomes hot.

Put the tubes in the heating reactor at 150°C during 120 minutes.
After 120 minutes, take the tubes with the wooden clamp (be carreful, they are very hot) and shake gently. Put the tubes in the tube stand et let cool to room temperature (>20 minutes).

MEASUREMENT

Select the analysis **175 DCO : 50-1500 mg/L**
Take the tube for the blank tube and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

INTERFERENCES

Suspended solids in the tube lead to incorrect measurements. For this reason it is important to place the tubes carefully in the sample chamber. The precipitate at the bottom of the sample should be not suspended. Samples can be measured when the Chloride content does not exceed 1000 mg/l.

If the sample are COD < 100 mg/L, we advise to do measure with kit COD LR for a best precision.

I-176 - COD LR : 5 - 150 mg/L O_2

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LS / SP

Reagents kit reference : 12DC02
Preparation time : ~ 2h30

ATTENTION : The tubes contains sulfuric acid <90% (corrosive) and potassium dichromate < 0,5% (toxic). Before starting measure, please read MSDS.

REAGENTS

Reaction tubes	424433
Demineralized water	

RECOMMENDED EQUIPMENT

Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU003
24 tubes stand Ø16	1PT013
Wooden clamp	1PT007
Heating reactor	1RD010

TEST INSTRUCTION

Turn on the heating reactor. Preheat to 150 °C.
Take 2 tubes: one for the blank and one for the sample.
With the pipette, put 2 ml of demineralized water in the tube for the blank, close and shake gently the tube. Likewise, put 2 ml of water to analyze in the tube for the sample.

Be carreful, the reaction is exothermic and the tube becomes hot.

Put the tubes in the heating reactor at 150°C during 120 minutes.
After 120 minutes, remove the tubes with the wooden clamp (be carreful, they are very hot) and shake gently. Put the tubes in the tube stand et allow to cool to room temperature (>20 minutes).

MEASUREMENT

Select the analysis **176 DCO : 5-150 mg/L**
Take the tube for the blank tube and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

INTERFERENCE

Suspended solids in the tube lead to incorrect measurements. For this reason it is important to place the tubes carefully in the sample chamber. The precipitate at the bottom of the sample should be not suspended. Samples can be measured when the Chloride content does not exceed 1000 mg/l.

I-180 - DEHA : 0.02 - 1.00 mg/L

Photopod
LS

Reagent kit : 1MT182
Preparation time : ~ 11.5 min

REAGENTS

DEHA n°1 Reagent
DEHA n°2 Reagent

EQUIPMENT

Graduated Plastic Tube	14TP00
Glass Tube	1CR099
Spoon	1J0000

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 spoonful of DEHA n°1 reagent and shake strongly ~30 s
Add 5 drops of DEHA n°2 Reagent, ans shake
Wait 10 minutes, inverting the tube every minute to homogenize.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **180 DEHA : 0,02 - 1,00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Note : Avoid exposure to sunlight.
Make the measurement at a temperature between 22°C and 28°C .

INTERFERENCES

Reagents react with iron. Presence of Iron will give overstimated results

substance	concentration	substance	concentration
Borate	500 mg/l	Nickel	0,8 mg/l
Cobalt	0,025 mg/l	Phosphate	10 mg/l
Copper	8,0 mg/l	Phosphonates	10 mg/l
Hardness	1000 mg/l	Sulfate	1000 mg/l
Lignosulfonates	0,05 mg/l	Zinc	50 mg/l
Manganese	0,8 mg/l		
Molybdene	80 mg/l		

I-181 - DEHA : 0.02 - 2.00 mg/L

Photopod
SP

Reagent kit : 1MT189
Preparation time : ~ 6 min

REAGENTS

DEHA Tablet
DEHA Solution

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass tube	1CR099
Syringes 1 ml	1SU010 * 2

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 DEHA Tablet, crush it with the crushing rod and shake to dissolve ~ 30 s.
Add 0.5 ml of DEHA solution With the syringe 1 ml and shake
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **181 DEHA. : 0.02 - 2.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze

Put the black cover on top of the tube and press the key « measure »

Note : Avoid exposure to sunlight.
Make the measurement at a temperature between 22°C and 28°C .

INTERFERENCES

Reagents react with iron. Presence of Iron will give overstimated results

substance	concentration	substance	concentration
Borate	500 mg/l	Nickel	0,8 mg/l
Cobalt	0,025 mg/l	Phosphate	10 mg/l
Copper	8,0 mg/l	Phosphonates	10 mg/l
Hardness	1000 mg/l	Sulfate	1000 mg/l
Lignosulfonates	0,05 mg/l	Zinc	50 mg/l
Manganese	0,8 mg/l		
Molybdene	80 mg/l		

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LS / SP

I-191 - Chlorine Dioxide: 2.4 - 28.5mg/L ClO_2

Reagent kit : 1MT177
Preparation time : ~ 7 min

REAGENTS

DPD 1 Tablet
Glycine Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 12.5 ml sample of water to analyze in the graduated plastic tube.
Add 1 Glycine tablet and shake to obtain total dissolution ~ 1 min
Add 1 DPD 1 tablet and shake to obtain total dissolution ~ 1 min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement 5 min after crushing the DPD 1 tablet.

MEASUREMENT

Select the analysis **191 ClO2 : 2.40 - 28.5 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS / SP

I-192 - Chlorine Dioxide: 0.20 - 4.75 mg/L ClO_2

Reagent kit: 1MT177
Preparation time : ~ 4 min

REAGENTS

DPD 1 Tablet
Glycine Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 20 ml sample of water to analyze in the graduated plastic tube.
Add 1 Glycine tablet and shake to obtain total dissolution ~ 1 min
Add 1 DPD 1 tablet and shake to obtain total dissolution ~ 1 min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement 2 min after crushing the DPD 1 tablet.

MEASUREMENT

Select the analysis **192 ClO2 : 0.20 - 4.75 mg/**L
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

I-200 - Total Hardness : 5.0 - 50.0°F

Photopod
LS/SP

Reagent kit : 1MT143
Preparation time : ~ 5 min

REAGENTS

Hardicol n°1 Tablet
Hardicol n°2 Tablet
Demineralized water

EQUIPMENT

Graduated Plastic Tube	14TP00 * 2
Crushing Rod	1AP018
Glass Tube	1CR099
Syringe 5 ml	1SU012

TEST INSTRUCTIONS

With the syringue, take 4 ml of water to analyze, introduce it in the graduated plastic tube and complete with demineralized water up to 10 ml
Close the tube and shake.
Add 1 Hardicol n°1 tablet, crush it with the crushing rod and shake to dissolve ~ 1 min
Add 1 Hardicol n°2 tablet, crush it with the crushing rod and shake to dissolve ~ 30 s
Ensure that the tablet are well dissolved
Wait 2 minutes.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **200 TH : 5.0 - 50.0 °F**
With the syringue, take 4 ml of water to analyze, introduce it in the graduated plastic tube and complete with demineralized water up to 10 ml
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Nota :
For water containing Iron in concentrations higher than 10 mg/l, results will be underestimated.
The pH of the water should be between 4 and 10.

I-201 - Total Hardness : 2.0 - 20.0°F

Photopod
LS/SP

Reagent kit: 1MT143
Preparation time: ~ 4 min

REAGENTS

Hardicol n°1 Tablet
Hardicol n°2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Hardicol n°1 tablet, crush it with the crushing rod and shake to dissolve ~ 1 min
Add 1 Hardicol n°2 tablet, crush it with the crushing rod and shake to dissolve ~ 30 s
Ensure tha the tablet are well dissolved
Wait 2 minutes.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **201 TH : 2.0 - 20.0 °F**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Nota :
For water containing Iron in concentrations higher than 10 mg/l, results will be underestimated.
The pH of the water should be between 4 and 10.

Photopod
LS

I-210 - Iron : 0,05 - 5.00 mg/L Fe^{2+} Fe^{3+}

Reagent kit : 1MT144
Preparation time : ~ 3 min

REAGENTS

Ferrordis Reagent	
Chlorhydric Acid ½ (optional)	1AC000
Sodium Hydroxide 1N (optional)	1SH055

EQUIPMENT

pH indicator test strips 0-14	1PI030
Glass Tube	1CR099

TEST INSTRUCTIONS

Check with the pH indicator test strip that the pH of the water to analyze is between 3 and 9 (T° ideally between 15 and 25°C), if not, adjust with Chlorhydric Acid or Sodium Hydroxide.
Take a 10 ml sample of water to analyze in a glass tube
Add 6 drops of Ferrordis reagent, shake.
Wait 2 minutes.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement.

MEASUREMENT

Select the analysis **210 Fe : 0,05- 5.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod

SP

I-211 - Iron: 0.2 - 20,0 mg/L Fe^{2+} Fe^{3+}

Reagent kit : 1MT145
Preparation time : ~ 4 min

REAGENTS

Iron 1 HR Tablet	
Chlorhydric Acid ½ (optional)	1AC000
Sodium Hydroxide 1N (optional)	1SH055

EQUIPMENT

pH indicator test strips 0-14	1PI030
Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Check with the pH indicator test strip that the pH of the water to analyze is between 3 and 9 (T° ideally between 15 and 25°C)), if not, adjust with Chlorhydric Acid or Sodium Hydroxide.
Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Iron 1 HR tablet, crush it with the crushing rod.
Close the tube and shake strongly to dissolve ~ 3 min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 1 min
Proceed to the measurement.

MEASUREMENT

Select the analysis **211 Fe : 0,2 - 20.0 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
SP

I-212 - Iron : 0.05 - 5.00 mg/L Fe^{2+} Fe^{3+}

Reagent kit : 1MT146
Preparation time : ~ 7 min

REAGENTS

Iron MR 1 Tablet
Iron MR 2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Iron MR 1 tablet, crush it with the crushing rod and shake to dissolve ~ 30 s
Add 1 Iron MR 2 tablet crush it with the crushing rod and shake to dissolve ~ 1min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 min
Proceed to the measurement.

MEASUREMENT

Select the analysis **212 Fe : 0.05 - 5.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod

LS

I-213 - Fer : 0.1 - 10.0 mg/L Fe^{2+} Fe^{3+}

Reagent kit : 1MT194
Preparation time : ~ 13 min

REAGENTS

Iron Reagent 1	1RF005
Iron Reagent 2	1RF006
Iron Reagent 3	1RF007

EQUIPMENT

Graduated Plastic Tube	14TP00
Glass Tube	1CR099

TEST INSTRUCTIONS

Prélever 20 ml d'eau à analyser dans le tube plastique gradué.
Vérifier à l'aide de papier indicateur que le pH est compris entre 3 et 9.
Ajouter 10 gouttes de Réactif Fer 1, mélanger.
Ajouter 1 jauge de Réactif Fer 2, mélanger jusqu'à dissolution complète.
Ajouter 10 gouttes de Réactif Fer 3, mélanger.
Attendre 10 minutes.
Remplir une cuve photométrique avec cette préparation en utilisant l'entonnoir plastique puis boucher la cuve.
Effectuer la mesure.

MEASUREMENT

Select the analysis **213 Fe : 0,1- 10,0 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

NOTA : To measure Iron II only, proceed the same way as Total Iron measurement but without adding Iron Reagent 2.

I-220 - Fluoride : 0.10 - 2.00 mg/L F^-

Photopod
LS

Reagent kit : 1MT110
Preparation time : ~ 5.5 min

REAGENTS

Fluoride test tubes

EQUIPMENT

Syringe 2 ml	1SU001
Glass Tube	1CR099

Option for more accurate analysis

Automatic Pipette 1 - 5 ml	1PA023
+Pipette Tips 1 - 5 ml	1EU003
or	
Graduated Pipette 2 ml	1PG001
+Macropipette	1T0007

TEST INSTRUCTIONS

Take a 2 ml sample of water to analyze and insert it in a Fluoride test tube, cover the tube and invert it 3 times to homogenize.
Wait 5 minutes.
Proceed to the measurement.

MEASUREMENT

Select the analysis **220 F^- : 0,10 - 2.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

Nota : Aluminum, calcium and iron disturb the reaction and lead to underestimated results.
Nitrates interfere when superior to 100 mg/l.

Photopod
SP

I-221 - Fluoride : 0.20 - 2.00 mg/L F^-

Reagent kit : 1MT147
Preparation time : ~ 7 min

REAGENTS

Fluoride 1 Tablet
Fluoride 2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Fluoride 1 tablet, crush it with the crushing rod and stir with the rod to dissolve ~ 30 s
Don't shake the plastic tube
Add 1 Fluoride 2 tablet, crush it with the crushing rod and stir with the rod to dissolve ~ 90 s
Don't shake the plastic tube
Wait 5 min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement.

MEASUREMENT

Select the analysis **221 F^- : 0,20 - 2.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod

LS

I-230 - Hydrazine : 0,10 - 1,00 mg/L N_2H_4

Reagent kit : 1MT019
Preparation time : ~ 3 min

REAGENTS

DAB Indicator

EQUIPMENT

Graduated Plastic Tube	14TP00
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 5 ml sample of water to analyze in the graduated plastic tube.
Add DAB indicator to 10 ml and shake
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 2 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **230 N_2H_4 : 0,10 - 1,00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
SP

I-231 - Hydrazine : 0.02 - 1.00 mg/L N_2H_4

Reagent kit : 1MT160
Preparation time : ~ 3.5 min

REAGENTS

Hydrazine powder

EQUIPMENT

Graduated Plastic Tube	14TP00
Glass Tube	1CR099
Spoon	

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 spoon of hydrazine powder
Close the tube and shake strongly 1 min 30 s
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 2 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **231 N_2H_4 : 0.02 - 1.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS / SP

I-240 - Magnesium : 5.0 - 50.0 mg/L Mg

Reagent kit : 1MT161
Preparation time : ~ 5 min

REAGENTS

Magnecol Tablet
Demineralized water

EQUIPMENT

Graduated Plastic Tube	14TP00*2
Crushing Rod	1AP018
Glass Tube	1CR099
Syringe 1 ml	1SU010

TEST INSTRUCTIONS

With the syringe, take a 1 ml sample of water to analyze, introduce it in the graduated tube then complete up to 10 ml with demineralized water.
Close and shake
Add 1 Magnecol tablet, crush it with the crushing rod and shake to dissolve ~ 1 min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 3 min
Proceed to the measurement

MEASUREMENT

Select the analysis **240 Mg: 5.00 - 50.0 mg/L**
In the graduated plastic tube introduce 1 ml sample of water to analyze
Fill the Tube to the 10 ml mark with Demineralized water.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS / SP

I-241 - Magnesium : 0.50 - 5.00 mg/L Mg

Reagent kit : 1MT161
Preparation time : ~ 4 min

REAGENTS

Magnecol Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Magnecol tablet, crush it with the crushing rod and shake to dissolve ~ 1 min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 3 min
Proceed to the measurement

MEASUREMENT

Select the analysis **241 Mg: 0.05 - 5.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS

I-250 - Manganese : 0.20 - 5.00 mg/L Mn

Reagent kit : 1MT050
Preparation time : ~ 6 min

REAGENTS

Manganese 1 Reagent
Manganese 2 Reagent
Manganese 3 Reagent

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU013

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the glass tube
Add 8 drops of Manganese 1 Reagent
Close and shake.
Add 8 drops of Manganese 2 Reagent
Close and shake.
Wait 2 minutes.
Add 8 drops of Manganese 3 Reagent
Close and shake.
Wait 5 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **250 Mn : 0,20 - 5,00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

INTERFERENCES
Concentrations in Ca^{2+} and Mg^{2+} higher than 300 mg/l lead to over-estimated results.
In the presence of Ca^{2+}, concentration in phosphates higher than 5 mg/l lead to underestimated results.
pH of the sample should be between 3 and 10. Temperature of the sample should be between 15 and 25°C.

Photopod

SP

I-251 - Manganese : 0.10 - 8.00 mg/L Mn

Reagent kit : 1MT162
Preparation time : ~ 6 min

REAGENTS

Manganese HR 1 Tablet
Manganese HR 2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Manganese HR 1 tablet, crush it with the crushing rod and shake to dissolve ~ 45 s
Add 1 Manganèse HR 2 tablet, crush it with the crushing rod and shake to dissolve ~ 45 s
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes
Proceed to the measurement

MEASUREMENT

Select the analysis **251 Mn : 0.10 - 8.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod

LS

I-270 - Molybdates : 0.5 - 20.0 mg/L MoO_4-Mo

Reagent kit : 1MT183
Preparation time : ~ 1 min

REAGENTS

Molybdate Reagent compensator
Molybdate reagent

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU007

TEST INSTRUCTIONS

With syringue, take a 10 ml sample of water to analyze in the glass tube
Add 5 drops of Molybdate Reagent compensator
Close and shake
Add 5 drops of Molybdate Reagent.
Close and shake
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 1 minute.
Proceed to the measurement

MEASUREMENT

Select the analysis **270 MoO4-Mo: 0.5 - 20.0 mg/L** *(Result in mg/lde Mo)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as MoO_4 mg/l = result x 1,66

Concentration as Na_2MoO_4 mg/l = result x 2,15

Photopod
SP

I-271 - Molybdates : 3.0 - 60.0 mg/L MoO_4-Mo

Reagent kit : 1MT024
Preparation time : ~ 2 min

REAGENTS

Molybdate n°1 Tablet
Molybdate n°2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 molybdate n°1 tablet, crush it with the crushing rod and shake to dissolve ~ 1 min
Add 1 molybdate n°2 tablet, crush it with the crushing rod and shake to dissolve ~ 1 min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **271 MoO4-Mo : 3.0 - 60.0 mg/L** *(Result in mg/l of Mo)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as MoO_4 mg/l = result x 1,66

Concentration as Na_2MoO_4 mg/l = result x 2,15

I-272 - Molybdates : 20 - 200 mg/L MoO_4-Mo

Photopod
LS

Reagent kit : 1MT183
Preparation time : ~ 1.5 min

REAGENTS

Molybdate Reagent compensator
Molybdate reagent

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU007

TEST INSTRUCTIONS

With the syringue, take a 10 ml sample of water to analyze in the glass tube
Add 5 drops of Molybdate Reagent compensator
Close and shake
Add 5 drops of Molybdate Reagent.
Close and shake
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 1 minute.
Proceed to the measurement

MEASUREMENT

Select the analysis **272 MoO4-Mo : 20 - 200 mg/L** *(Result in mg/l of Mo)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as MoO_4 mg/l = result x 1,66

Concentration as Na_2MoO_4 mg/l = result x 2,15

I-280 - Nickel : 0,10 - 5,00 mg/L Ni

Photopod
LS

Reagent kit : 1MT164
Preparation time : ~ 4 min

REAGENTS

Nickel 1 Reagent
Nickel 2 Reagent

EQUIPMENT

Graduated Plastic Tube	14TP00
Plastic Spoon	1J0000
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 spoonfull to the brim of of Nickel 1 Reagent and shake
Add 10 drops of Nickel 2 Reagent, and shake (color changes to orange).
Wait 3 minutes.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **280 Ni : 0,10 - 5,0 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

NOTA :

Interferences happens when :

Mn2+	>	1 mg/l
Co2+ Cu2+ Fe3+	>	5 mg/l
Cr3+ Zn2+	>	10 mg/l

Photopod
SP

I-281 - Nickel : 0.50 - 10 mg/L Ni

Reagent kit : 1MT079
Preparation time : ~ 3 min

REAGENTS

Nickeltest 1 tablet
Nickeltest PR POWDER
Nickeltest 2 tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Plastic spoon	1J0000
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Nickeltest 1 tablet, crush it with the crushing rod and shake to dissolve. ~ 30 s
Only if the sample contains iron Add 1 spoonfull of Nickeltest PR POWDER and shake
Add 1 Nickeltest 2 tablet, crush it with the crushing rod and shake to dissolve ~ 30 s
A bit of foam appears. Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 2 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **281 Ni : 0.50 - 10 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

NOTA :
Interferences happens when

Mn^{2+}	>	1 mg/l
Co^{2+} Cu^{2+} Fe^{3+}	>	5 mg/l
Cr^{3+} Zn^{2+}	>	10 mg/l

I-300 - Nitrates : 0.10 - 1.00 mg/L NO_3^--N

Photopod
SP

Reagent kit : 1MT101
Preparation time : ~ 17 min

REAGENTS

Nitrate Reagents :
Nitratest Powder
Nitratest Tablets (contained in a white flask)
Nitricol Tablets

EQUIPMENT

Graduated Plastic Tube	14TP00 x 2
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 20 ml sample of water to analyze in the graduated plastic tube.
Add 1 spoonful of Nitratest Powder and 1 Nitratest tablet (from the white flask). Don't crush the tablet. Cover the tube and shake for 1 minute.
Wait 1 minute, then invert the tube 4 times to allow the floculation. Wait until the liquid is clear (~2 minutes).
Remove the cap and wipe around the top of the tube with a clean tissue.
Pour carefully 10 ml of the clear solution in another graduated plastic tube.
Add 1 Nitricol tablet, crush it with the crushing rod and shake to dissolve.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 10 minutes (after crushing the Nitricol tablet)
Proceed to the measurement.

MEASUREMENT

Select the analysis **300 NO_3-N : 0.10 - 1.00 mg/L** *(Result in mg/L of N)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

Concentration as mg/L NO_3^- = result x 4,4

Nitrite Correction
The reagent also reacts with Nitrite. Most of the time, concentration in Nitrite is low compared to concentration in nitrate. But concentration in nitrite can be measured (in mg/l) and deduced from the concentration measured with this method.

I-301 - Nitrates : 0,06 - 2,30 mg/L NO_3^--N

Photopod
LS/SP

Reagent kit : 1MT184
Preparation time : ~ 10 min

REAGENTS

Nitrates 1 Reagent
Powder nitrate Reagent

EQUIPMENT

Graduated Plastic Tube	14TP00 x 2
Crushing Rod	1AP018
Glass Tube	1CR099
Syringe 10ml	1SU013
Filter holder	14PF09
Filter paper	14PF05
Clamp	1PM010
Plastic spoon	1J0000

TEST INSTRUCTIONS

Take the filter holder, unscrew it and introduce it with the clamp, screw the bracket.
In the first graduated plastic tube, take a 10 ml sample of water to analyze
Add 1 spoonfull of Powder nitrate Reagent
Close and skake 1 minute
With the syringe 10ml take totaly sample (water+zinc)
Fit the 10 ml syringe containing the sample on the filter holder and gently squeeze out a few drops of (=rinsing the filter).
Filter the sample and introduce it in the second plastic tube graduated to 5 ml graduation.
Add nitrate 1 Reagent to 10 ml and shake.
Wait 3 minutes.
Proceed to the measurement

Unscrew the filter holder, remove the soiled filter and clean all the water.

MEASUREMENT

Select the analysis **301 NO_3-N : 0,06 - 2.30 mg/L** *(Result in mg/L of N)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as mg/L NO_3^- = result x 4,4

Nitrite correction

The method optionally reacts with the nitrite present in the sample. Nitrite content is low compared to that of nitrate in most of the water, but can determine the concentration (mg / l N) of nitrite and then deduct the value of the content (in mg / l N) nitrate.

I-302 - Nitrates : 1.0 - 22.5 mg/L NO_3^--N
I-304 - Nitrates : 4,5 - 45.0 mg/L NO_3^-N

Photopod
SP

Reagent kit : 1MT101
Preparation time : ~ 17 min

REAGENTS

Nitrate Reagents :
Nitratest Powder
Nitratest Tablets (contained in a white flask)
Nitricol Tablets
Demineralized water

EQUIPMENT

Graduated Plastic Tube	14TP00 x 3
Crushing Rod	1AP018
Syringe 1 ml	1SU010
Glass Tube	1CR099

TEST INSTRUCTIONS

With the syringe take a 1 ml sample of water to analyze, introduce it in the graduated plastic tube then complete up to 20 ml with Demineralized water
Close and shake
Add 1 spoonful of Nitratest Powder and 1 Nitratest tablet (from the white flask). Don't crush the tablet. Cover the tube and shake for 1 minute.
Wait 1 minute, then invert the tube 4 times to allow the floculation. Wait until the liquid is clear (~2 minutes).
Remove the cap and wipe around the top of the tube with a clean tissue.
Pour carefully 10 ml of the clear solution in another graduated plastic tube.
Add 1 Nitricol tablet, crush it with the crushing rod and shake to dissolve.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 10 minutes (after crushing the Nitricol tablet)
Proceed to the measurement.

MEASUREMENT

Select the analysis **302 NO3 : 1,0 - 22,5 mg/L** *(Result in mg/L of N)*

304 NO_3-N : 4,5 - 45.0 mg/L *(Result in mg/L of N)*

In the graduated plastic tube introduce 1 ml sample of water to analyze
Fill the Tube to the 20 ml mark with Demineralized water.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as mg/L NO_3^- = result x 4,4

Nitrite correction

The method optionally reacts with the nitrite present in the sample. Nitrite content is low compared to that of nitrate in most of the water, but can determine the concentration (mg / l N) of nitrite and then deduct the value of the content (in mg / l N) nitrate.

I-303 - Nitrates : 0.6 - 23.0 mg/L NO_3^--N

Photopod
LS/SP

Reagent kit : 1MT184
Preparation time : ~ 10 min

REAGENTS

Nitrates 1 Reagent
Powder nitrate Reagent
Demineralized water

EQUIPMENT

Graduated Plastic Tube	14TP00 x 2
Crushing Rod	1AP018
Glass Tube	1CR099
Syringe 10ml	1SU013
Syringe 1 ml	1SU010
Filter holder	14PF09
Filter Paper	14PF05
Clamp	1PM010
Plastic spoon	1J000

TEST INSTRUCTIONS

Take the filter holder, unscrew it and introduce the filter paper, screw the bracket.
In the first graduated plastic tube take, with the syringe introduce a 1 ml sample of water to analyse and complete with Demineralized water up to 10 ml
Shake
Add 1 spoonfull of Powder nitrate Reagent
Close and skake 1 minute
With the syringe 10ml take totally the sample (water+zinc)
Fit the 10 ml syringe containing the sample on the filter holder and gently squeeze out a few drops of (=rinsing the filter).
Filter the sample and introduce it in the second plastic tube up to 5 ml graduation.
Add nitrate 1 Reagent up to 10 ml and shake.
Wait 3 minutes.
Proceed to the measurement

Unscrew the filter holder, remove the soiled filter and clean all the water.

MEASUREMENT

Select the analysis **303 NO_3-N : 0.6 - 23.0 mg/L** *(Result in mg/L of N)*

In the graduated plastic tube introduce 1 ml sample of water to analyze
Fill the Tube to the 10 ml mark with Demineralized water.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Nitrite correction

The method optionally reacts with the nitrite present in the sample. Nitrite content is low compared to that of nitrate in most of the water, but can determine the concentration (mg / l N) of nitrite and then deduct the value of the content (in mg / l N) nitrate.

I-305 - Nitrates : 0,06 - 1,80 mg/L NO_3^--N

METHOD FOR SEA WATER ONLY

Reagent kit : 1MT184
Preparation time : ~ 10 min

Photopod
LS/SP

REAGENTS

Nitrates 1 Reagent
Powder nitrate Reagent

EQUIPMENT

Graduated Plastic Tube	14TP00 x 2
Crushing Rod	1AP018
Glass Tube	1CR099
Syringe 10ml	1SU013
Filter holder	14PF09
Filter paper	14PF05
Clamp	1PM010
Plastic spoon	1J0000

TEST INSTRUCTIONS

Take the filter holder, unscrew it and introduce it with the clamp, screw the bracket.
In the first graduated plastic tube, take a 10 ml sample of water to analyze
Add 1 spoonfull of Powder nitrate Reagent
Close and skake 1 minute
With the syringe 10ml take totaly sample (water+zinc)
Fit the 10 ml syringe containing the sample on the filter holder and gently squeeze out a few drops of (=rinsing the filter).
Filter the sample and introduce it in the second plastic tube graduated to 5 ml graduation.
Add nitrate 1 Reagent to 10 ml and shake.
Wait 3 minutes.
Proceed to the measurement

Unscrew the filter holder, remove the soiled filter and clean all the water.

MEASUREMENT

Select the analysis 3**05 NO_3-N : 0,06 - 1.80 mg/L** *(Result in mg/L of N)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as mg/L NO_3^- = result x 4,4

Nitrite correction

The method optionally reacts with the nitrite present in the sample. Nitrite content is low compared to that of nitrate in most of the water, but can determine the concentration (mg / l N) of nitrite and then deduct the value of the content (in mg / l N) nitrate.

I-306 - Nitrate : 0,1 - 20 mg/L NO_3^--N

Photopod
LS/SP

Reagents kit reference : 12NI00
Preparation time : ~ 5min

REAGENTS

Reaction tube	419084-0
Blank Tube (red label)	
Nitrate-111	424396

RECOMMENDED EQUIPMENT

Automatic pipette 0,1 - 1 ml	1PA022
Pipette Tip 0,1 - 1 ml	1EU002
24 tubes stand Ø16	1PT013

TEST INSTRUCTIONS

With the pipette, put 0,5 ml of water to analyze in the reaction tube, close and gently shake.

Be carreful, the reaction is exothermic and the tube becomes hot.

Add 0,2 ml of nitrate 111, close and return several times the tube.
Wait 5 minutes.

MEASUREMENT

Select the analysis **306 NO3 -N : 0,02 - 20 mg/L**
Take the tube for the blank (tube with red label) and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

Concentration as mg/L NO_3^- = result x 4,4

INTERFERENCES

Nitrite concentrations greater than 2 mg/L NO_2^- lead to higher test results. . Great quantities of COD lead to higher test results.

Photopod
LS/SP

I-320 - Nitrites : 0.01 - 0.60 mg/L NO_2-N

METHOD COMPATIBLE WITH SEA WATER

Reagent kit : 1MT027
Preparation time : ~ 6 min

REAGENTS

Concentrated Ammoniac
Z Indicator

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU013

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the glass tube
Add 7 drops of Z Indicator
Close the tube and shake.
Wait 5 minutes.
Add 7 drops of Concentrated Ammoniac
Close the tube et shake : a yellow color appears instantaneously
Proceed to the measurement

MEASUREMENT

Select the analysis **320 NO_2 -N : 0,01 - 0,60 mg/L** *(Result in mg/L of N)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as mg/L NO_2 = result x 3,3

I-321 - Nitrites : 0.01 - 0.60 mg/L NO_2 -N

Photopod
SP

Reagent kit : 1MT165
Preparation time : ~ 11 min

REAGENTS

Nitricol 1 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 nitricol tablet crush it with the crushing rod and shake to dissolve ~ 1 min
Wait 10 min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **321 NO_2 -N : 0,01 - 0,60 mg/L** *(Result in mg/L of N)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as mg/L NO_2 = result x 3,3

Photopod
SP

I-322 - Nitrites : 0.4- 41 mg/L NO_2 -N

Reagent kit : 1MT166
Preparation time : ~ 3 min

REAGENTS

Nitriphot 1 Tablet
Nitriphot 2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Nitriphot 1 tablet crush it with the crushing rod.
Close the tube and shake strongly to dissolve ~ 1-2 min
Add 1 Nitriphot 2 tablet crush it with the crushing rod and shake to dissolve ~ 15s
Wait 1 min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **322 NO_2 -N : 0.4 - 41 mg/L** *(Result in mg/L of N)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as mg/L NO_2 = result x 3,3

Photopod
SP

I-323 - Nitrites : 4- 410 mg/L N

Reagent kit : 1MT166
Preparation time : ~ 3 min

REAGENTS

Nitriphot 1 Tablet
Nitriphot 2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00 x2
Crushing Rod	1AP018
Glass Tube	1CR099
Syringe 1 ml	1SU010

TEST INSTRUCTIONS

With the syringe, take a 1 ml sample of water to analyze, introduce it in the graduated tube then complete up to 10 ml with demineralized water.
Close and shake
Add 1 Nitriphot 1 tablet, crush it with the crushing rod.
Close the tube and shake strongly to dissolve ~ 1-2 min
Add 1 Nitriphot 2 tablet, crush it with the crushing rod and shake to dissolve ~ 15s
Wait 1 min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **323 NO_2 -N : 4 - 410 mg/L** *(Result in mg/L of N)*

In the graduated plastic tube introduce 1 ml sample of water to analyze
Fill the Tube to the 10 ml mark with Demineralized water.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as mg/L NO_2 = result x 3,3

I-324 - Nitrite LR : 0,01- 1 mg/L NO_2^--N

Photopod
LS/SP

Reagents kit reference : 12NI01
Preparation time : ~ 12min

REAGENTS

Reaction tubes	419081-0
Blank Tube (red label)	
Nitrite-101	424314

RECOMMENDED EQUIPMENT

Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU003
24 tubes stand Ø16	1PT013

TEST INSTRUCTIONS

With the pipette, put 2 ml of water to analyze in the reaction tube, close and shake several times.
Add 1 level scoop of No. 8 (black) nitrite-101, close, and shake for 30 seconds.
Wait 5 minutes.

MEASUREMENT

Select the analysis **324 NO2 -N : 0,01 - 1 mg/L** *(Result in mg/L of N)*

Take the tube for the blank (tube with red label) and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

Concentration as mg/L NO_2 = result x 3,3

Photopod
LS/SP

I-325 - Nitrite HR : 0,1- 5 mg/L NO_2^--N

Reagents kit reference : 12NI01
Preparation time : ~ 12min

REAGENTS

Reaction tubes	419081-0
Blank Tube (red label)	
Nitrite-101	424314

RECOMMENDED EQUIPMENT

Automatic pipette 0,1 - 1 ml	1PA022
Pipette Tip 0,1 - 1 ml	1EU002
24 tubes stand Ø16	1PT013

TEST INSTRUCTIONS

With the pipette, put 0,5 ml of water to analyze in the reaction tube, close and shake several times.
Add 1 level scoop of No. 8 (black) nitrite-101, close, and shake for 30 seconds.
Wait 5 minutes.

MEASUREMENT

Select the analysis **325 NO2 -N : 0,1 - 5mg/L** *(Result in mg/L of N)*

Take the tube for the blank (tube with red label) and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

Concentration as mg/L NO_2 = result x 3,3

Photopod
LS/SP

I-331 - Ozone : 0.30 - 4.00 mg/L O_3

Reagent kit : 1MT029
Preparation time : ~ 6 min

REAGENTS

DPD 4 Tablet
Glycine Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

1- TOTAL CHLORINE + OZONE
Take a 12,5 ml sample of water to analyze in the graduated plastic tube.
Add 1 DPD 4 tablet and shake to dissolve.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes.
Proceed to the measurement.
This gives the value 1 : total chlorine + ozone in mg/l of O_3

2- TOTAL CHLORINE ONLY
Take a 12,5 ml sample of water to analyze in the graduated plastic tube.
Add 1 DPD 4 tablet and shake to dissolve.
Add 1 DPD Glycine tablet and shake to dissolve.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes.
Proceed to the measurement.
This gives the value 2 : total chlorine in mg/l of O_3

3- OZONE
Concentration in mg/l of O_3 = value 1 - value 2

MEASUREMENT

Select the analysis **331 O3 : 0.30 - 4.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS/SP

I-332 - Ozone : 0.03 - 0.65 mg/L O_3

Reagent kit : 1MT029
Preparation time : ~ 4 min

REAGENTS

DPD 4 tablet
DPD Glycine tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

1- TOTAL CHLORINE + OZONE

Take a 20 ml sample of water to analyze in the graduated plastic tube.
Add 1 DPD 4 tablet and shake to dissolve.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement
This gives the value 1 : total chlorine + ozone in mg/l of O_3

2- TOTAL CHLORINE ONLY

Take a 20 ml sample of water to analyze in the graduated plastic tube.
Add 1 DPD 4 tablet and shake to dissolve.
Add 1 DPD Glycine tablet and shake to dissolve.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 2 minutes.
Proceed to the measurement
This gives the value 2 : total chlorine in mg/l of O_3

3- OZONE
Concentration in mg/l of O_3 = value 1 - value 2

MEASUREMENT

Select the analysis **332 O3 : 0.03 - 0.65 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS / SP

I-340 - Hydrogen Peroxide: 2 - 200 mg/l H_2O_2

Reagent kit : 1MT148
Preparation time : ~ 1.5 min

REAGENTS

Acidifying PT Tablet
Hydrogen Peroxyde HR Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Acidifying PT tablet, crush it with the crushing rod and shake to dissolve ~ 30s
Add 1 Hydrogen Peroxyde HR tablet, crush it with the crushing rod and shake to dissolve ~ 30s
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT
Select the analysis **340 H_2O_2. : 2 - 200 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS / SP

I-341 - Hydrogen Peroxyde : 0.05 - 2.00 mg/l H_2O_2

Reagent kit : 1MT149
Preparation time : ~ 2.5 min

REAGENTS

Hydrogen Peroxyde LR Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Hydrogen Peroxyde LR tablet, crush it with the crushing rod and shake to dissolve ~ 30s
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 2 minutes
Proceed to the measurement

MEASUREMENT
Select the analysis **341 H_2O_2. : 0.05 - 2.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS

I-350 - pH 6.8 - 8.6

Reagent kit : 1MT036
Preparation time : ~ 2 min

pH 6,8 - 8,6

REAGENTS

Phenol red

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU013

TEST INSTRUCTIONS

With the syringe, take a 10 ml sample of water to analyze in the glass tube.
Add 16 drops of Phenol red.
Close and shake.
Proceed to the measurement

MEASUREMENT

Select the analysis **350 pH : 6.8 - 8.6 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS / SP

I-360 - Phenol : 0.05 - 10 mg/L Φ-OH

Reagent kit : 1MT167
Preparation time : ~ 6.5 min

REAGENTS

Phenoltest PR Tablet
Phenoltest 1 Tablet
Phenoltest 2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.

For sample containing Zinc, Copper, Iron, Manganese :
Add 1 Phenoltest PR Tablet, crush it with the crushing rod and shake to dissolve.

Add 1 Phenoltest 1 tablet, crush it with the crushing rod and shake to dissolve ~ 30s
Add 1 Phenoltest 2 tablet, crush it with the crushing rod and shake to dissolve ~ 1min

Wait 5 minutes.

Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT
Select the analysis **360 Phenol. : 0.05 - 10 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Interferences :
Lower results can be obtained if the sample contains more than 150 mg/L of alkaline agents, 10 mg/L of sulphite or 2mg/L sulfide.
Free chlorine does not affect the results for a concentration below 10 mg/L
Stronger results are obtained in the presence of Keto-enol
In the case of known or suspected interference, the sample should be pre-treated to be in agreement with the TEST INSTRUCTIONS.
The use of phenoltest PR tablet prevents the interference of metal ions to a concentration of 350 mg/L.

Photopod

LS

I-392 - Phosphates: 0,50 - 13,0 mg/L $PO_4^{3-}P$
I-380 - Phosphates: 1.00 - 36.00 mg/L P_2O_5

Reagent kit : 1MT030
Preparation time : ~ 12 min

REAGENTS N

Phosphate 1 Reagent
Phosphate 2 Reagent

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU013

TEST INSTRUCTIONS

With the syringe, take a 10 ml of water to analyze in a glass tube
Add 8 drops of Phosphate 1 Reagent
Close and shake.
Add 8 drops of Phosphate 2 Reagent
Close and shake.
Wait 10 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **392 PO4 -P : 0.50 - 13.0 mg/L** *(Result in mg/L of P)*
or **380 P_2O_5 : 1.00- 36.0 mg/L** *(Result in mg/L of P_2O_5)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as mg/L of PO_4 = result as mg/L of P x 3,1

Photopod

SP

I-390 - Phosphates : 0.06 - 1.30 mg/L PO_4^{3-}-P

Reagent kit: 1MT186
Preparation time: ~ 5 min

REAGENTS

Phosphate 1 Tablet
Phosphate 2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyse in the graduated plastic tube.
Add 1 Phosphate 1 Tablet, crush it with the crushing rod.
Close the tube and shake to dissolve ~ 3 min
Add 1 Phosphate 2 Tablet, crush it with the crushing rod and shake to dissolve ~ 1min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 1 minute.

Proceed to the measurement

MEASUREMENT
Select the analysis **390 PO4-P 0.65 - 1.30 mg/L** *(Result in mg/L of P)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as mg/L of PO_4 = result as mg/L of P x 3,1

I-391 - Phosphates : 0.06 - 1.60 mg/L PO_4^{3-}-P

Photopod
LS

Reagent kit : 1MT030
Preparation time : ~ 12 min

REAGENTS

Phosphate 1 Reagent
Phosphate 2 Reagent

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU013

TEST INSTRUCTIONS

With the syringe, take a 10 ml of water to analyze in a glass tube
Add 2 drops of Phosphate 1 Reagent
Close and shake.
Add 2 drops of Phosphate 2 Reagent
Close and shake.
Wait 10 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **391 PO4-P : 0.06 - 1.60 mg/L** *(Result in mg/L of P)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as mg/L of PO_4 = result as mg/L of P x 3,1

Photopod

SP

I-393 - Phosphates : 0.6 - 32.6 mg/L PO_4^{3-}-P

Reagent kit : 1MT185
Preparation time : ~ 2.5 min

REAGENTS

Phosphate HR 1 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Phosphate HR 1 Tablet, crush it with the crushing rod
Close the tube and shake to dissolve ~ 1.5 min
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 1 minute.

Proceed to the measurement

MEASUREMENT
Select the analysis **393 PO4 -P 0.6 - 32.6 mg/L** *(Result in mg/L of P)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as mg/L of PO_4 = result as mg/L of P x 3,1

I-394 - Phosphates : 1.00 - 40.0 mg/L PO_4^{3-}-P

Photopod
LS

Reagent kit : 1MT031
Preparation time : ~ 6 min

REAGENTS

Vanadomolybdique Reagent

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU013

TEST INSTRUCTIONS

With the syringe, take a 10 ml of water to analyze in a glass tube
Add 16 drops of Vanadomolybdique Reagent.
Close and shake.
Wait 5 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **394 PO4 -P : 1.00 - 40.0 mg/L** *(Result in mg/L of P)*

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Concentration as mg/L of PO_4 = result as mg/L of P x 3,1

I-402 - Total phosphate : 0,05 - 3 mg/L PO_4-P

Photopod
LS / SP

Reagents kit reference : 12PT00
Preparation time : ~ 40 min

REAGENTS

Reaction Tubes	424321001
Blank Tube (red label)	
Phosphate-101	424351
Phosphate-102	424299
Phosphate-103	424076

RECOMMENDED EQUIPMENT

Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU003
24 tubes stand Ø16	1PT013
Wooden clamp	1PT007
Heating reactor	1RD010

TEST INSTRUCTIONS

Turn on the heating reactor. Preheat at 100 °C.
Take one reaction tube and with the pipette, put 5 ml of water to analyse.
Add 1 level scoop of No. 4 (white) phosphate-103, close immediately, and shake for 30 seconds.
Put the tubes in the heating reactor at 100°C during 30 minutes.
After 30 minutes, take the tubes with the wooden clamp (be carreful, they are very hot) and shake gently. Put the tube in the tube stand et let cool to room temperature (>20 minutes).
Add 2 drops (0,1 ml) phosphate-101, close and shake several times.
Add 1 level scoop of No. 4 (white) phosphate-102, close, and shake for 30 seconds.
Wait 5 minutes.

MEASUREMENT

Select the analysis **402 PO4-P : 0,05 - 5mg/L** *(Result in mg/L of P)*

Take the tube for the blank (tube with red label) and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure ».

Concentration as mg/L of PO_4 = result as mg/L of P x 3,1

NOTES

If the analysis is performed without digestion only PO_4 ions are determined.

I-410 - Potassium : 2.00 - 15.0 mg/L K

Photopod
LS / SP

Reagent kit : 1MT168
Preparation time : ~ 4 min

REAGENTS

Potassium Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Potassium tablet, crush it with the crushing rod and shake to dissolve ~ 45s
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 3 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **410 K : 2.00 - 15.0 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod

LS

I-420 - Silica : 10 - 300 mg/L SiO_2
I-421 - Silica : 0,20 - 10 mg/L SiO_2

Reagent kit : 1MT040
Preparation time : ~8 min

REAGENTS

Ammonium Molybdate
Acide Sulfurique ¼
Acide Oxalique 10%

EQUIPMENT

Graduated Plastic Tube	14TP00
Plastic spoon	1J0000
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 20 ml sample of water to analyze in the graduated plastic tube.
Add 1 spoonful to the brim of Ammonium Molybdate shake to dissolve 30 s
Add 7 drops of Sulphuric acid ¼ and shake.
Wait 5 minutes.
Add 15 drops of Oxalic acid 10% and shake.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT

Select the analysis **420 SiO_2 : 10 - 300 mg/L**
or **421 SiO_2 : 0.20 - 10 mg/L**

Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

I-422 - Silica : 5 - 150 mg/L SiO_2

Photopod
SP

Reagent kit : 1MT173
Preparation time : ~ 12 min

REAGENTS

Silica HR 1 Tablet
Silica PR Tablet
Silica HR 2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyzein the graduated plastic tube.

Add 1 Silica HR 1 Tablet, crush it with the crushing rod. Close the tube and shake strongly to dissolve. ~ 2 min
Add 1 Silica HR 2 Tablet, crush it with the crushing rod. Close the tube and shake strongly to dissolve. ~ 2 min
Add 1 Silica PR Tablet, crush it with the crushing rod. Close the tube and shake strongly to dissolve ~ 6 min

Wait 2 minutes.

Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT
Select the analysis **422 SiO_2. : 5 - 150 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

I-423 - Silica : 0.05 - 10 mg/L SiO_2

Reagent kit : 1MT170
Preparation time : ~ 12 min

REAGENTS

Silica 1 Tablet
Silica PR Tablet
Silica 2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.

Add 1 Silica 1 Tablet, crush it with the crushing rod. Close the tube and shake strongly to dissolve. ~ 2 min
Add 1 Silica PR Tablet, crush it with the crushing rod. Close the tube and shake strongly to dissolve. ~ 6 min
Add 1 Silica 2 Tablet, crush it with the crushing rod. Close the tube and shake strongly to dissolve. ~ 2 min
Wait 2 minutes.

Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement

MEASUREMENT
Select the analysis **423 SiO_2. : 0.05 - 10 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod

LS

I-430 - Sulfates : 10 - 400 mg/L SO_4^{2-}

Reagent kit : 1MT080
Preparation time : ~ 11 min

REAGENTS

Sulfates n°1 Reagent
Sulfates n°2 Reagent

EQUIPMENT

Glass Tube	1CR099
Syringe 10 ml	1SU013

TEST INSTRUCTIONS

With the syringe, take a 10 ml sample of water to analyze in the glass tube
Add 5 drops of Sulfates n°1 Reagent, close the tube and shake strongly to 15 s
Add 10 drops of Sulfates n°2 Reagent, close the tube and shake strongly to 15 s.
Wait 10 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **430 SO_4 : 10 - 400 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod

SP

I-431 - Sulfates: 10 - 200 mg/L SO_4^{2-}

Reagent kit : 1MT171
Preparation time : ~ 6 min

REAGENTS

Sulfate Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Sulfate Tablet, crush it with the crushing rod and shake to dissolve~ 45s
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Wait 5 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **431 SO_4 : 10 - 200 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS

I-440 - Sulfide : 0.05 - 0.60 mg/L S

Reagent kit : 1MT172
Preparation time : ~ 6 min

REAGENTS

Sulfide n°1 Tablet
Sulfide n°2 Tablet

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Sulfide n°1 Tablet and 1 Sulfide n°2 Tablet, Crush it with the crushing rod and shake to dissolve.~ 1 min
Wait 5 minutes.
Proceed to the measurement

MEASUREMENT

Select the analysis **440 S : 0.05- 0.60 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod
LS / SP

I-450 - Turbidity : 100 - 4000 NTU

EQUIPMENT

Glass Tube 1CR099

MEASUREMENT

Select the analysis **TURBI : 450 Turbi : 100-4000 NTU**
Fill a glass tube with Demineralized water, put the cap and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».

Remove the glass tube, empty it and fill lit with water to analyze.
Insert the tube in the photometer.
Put the black cover on top of the tube and press the key « measure ».

Photopod
LS / SP

I-451 - Turbidity : 10 - 100 NTU

EQUIPMENT

Glass Tube 1CR099

MEASUREMENT

Select the analysis **TURBI : 451 Turbi : 10-100 NTU**
Fill a glass tube with Demineralized water, put the cap and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».

Remove the glass tube, empty it and fill lit with water to analyze.
Insert the tube in the photometer.
Put the black cover on top of the tube and press the key « measure ».

Photopod
LS

I-460 - Zinc : 0.05 - 4.00 mg/l Zn

Reagent kit : 1MT190
Preparation time : ~ 2 min

REAGENTS

Zinc 1 Reagent
Zinc 2 Reagent

EQUIPMENT

Crushing Rod	1AP018
Glass Tube	1CR099
Syringe 10 ml	1SU013

TEST INSTRUCTIONS

With the syringe, take a 10 ml sample of water to analyze and intoduce in the glass tube
Add 5 drops of Zinc 1Reagent
Shake
Wait 1 minute
Add 10 drops of Zinc 2 Reagent
Shake
Proceed to the measurement

MEASUREMENT

Select the analysis **460 Zn : 0.05 - 4.00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer
Put the black cover on top of the tube and press the key « zero »
Remove the tube and put the sample tube to analyze
Put the black cover on top of the tube and press the key « measure »

Photopod

SP

I-461 - Zinc : 0.10 - 4.00 mg/l Zn

Reagent kit : 1MT043
Preparation time : ~ 6 min

REAGENTS

Pack Zinc
Zinc Tablets
Dechlor Tablets
EDTA Tablets

EQUIPMENT

Graduated Plastic Tube	14TP00
Crushing Rod	1AP018
Glass Tube	1CR099

TEST INSTRUCTIONS

Water not containing copper or chlorine

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Zinc tablet, crush it with the crushing rod and shake to dissolve.
Wait 5 minutes.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement.

Water containing copper

Follow the instructions for « Water not containing copper or chlorine» above and proceed to the measurement.
The result is the concentration in zinc and copper Conc(Zn + Cu)
Transfer the content of the glass tube in the graduated plastic tube.
Add 1 EDTA tablet, Add 1 Zinc tablet, crush it with the crushing rod and shake to dissolve. (the color due to zinc disappear, the color due to copper remains).
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement
The result is the concentration in copper Conc(Cu)

Concentration zinc is :
Conc(Zn) = Conc(Zn + Cu) - Conc(Cu)

Water containing chlorine

Take a 10 ml sample of water to analyze in the graduated plastic tube.
Add 1 Dechlor tablet, crush it with the crushing rod and shake to dissolve.
Add 1 Zinc tablet, crush it with the crushing rod and shake to dissolve.
Wait 5 minutes.
Fill a glass tube with this preparation using the plastic funnel then cover the tube.
Proceed to the measurement.

MEASUREMENT

Select the analysis **461 Zn : 0,10 - 4,00 mg/L**
Fill a glass tube with water to analyze without reagent, put the cap and insert it in the photometer.
Put the black cover on top of the tube and press the key « zero ».
Remove the tube and put the sample tube to analyze.
Put the black cover on top of the tube and press the key « measure »