

Instructions for Spectrophotometric Analyzes

**Pre-programmed methods available
on all Uviline devices (except Uviline 8100/810)**

Update: January 2021

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U-010 - Cyanuric Acid: 10 - 200 mg/l**UVILINE**

Reagents Kit Reference: 1MS301

Preparation Time: ~ 5min

NECESSARY REAGENTS

Cyanuric Acid Reagent	1RA020
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NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Plastic Erlenmeyer 25 ml	1EP025

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in **the plastic erlenmeyer**.

Add 30 drops of Cyanuric Acid Reagent.

Homogenize.

Fill a measuring cell with this preparation.

Wait 5 minutes.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **010 Cya.Ac. : 10 - 200mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-011- Cyanuric Acid: 10 - 200 mg/l**UVILINE**

Reagents Kit Reference: 1MS302

Preparation Time: ~ 5min

NECESSARY REAGENTS

Cyanuric Acid Tablet	1CA008
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NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0*2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 Cyanuric Acid Tablet, wait 2 minutes to dissolve.

Put the rubber stopper and shake 2 min.

Fill a measuring cell with this preparation.

Wait 1 minute.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **011 Cya.Ac. : 10 - 200mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-020 - p-Alcalinity,TA: 2.0- 50.0° F**UVILINE**

Reagents Kit Reference: 1MS045

Preparation Time: ~ 6min

NECESSARY REAGENTS

Alkaphot P Tablet 1AP251

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 1 Alkaphot P Tablet, crush it and shake to dissolve.~ 45s
Fill a measuring cell with this preparation.
Wait 4 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **020 TA: 2.00 - 50.0 °F**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-030- m-Alcalinity,TAC : 2.0- 50.0 °F**UVILINE**

Reagents Kit Reference: 1MS046

Preparation Time: ~ 5min

NECESSARY REAGENTS

Alkaphot M Tablet 1AP250

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 Alkaphot M Tablet, crush it with the crushing rod and shake to dissolve.~ 45s

Fill a measuring cell with this preparation.

Wait 3 minutes.

Proceed to measurement.

*MEASUREMENT OF THE BLANK AND THE SAMPLE*In the concentration mode, select the analysis **030 TAC: 2.0- 50.0 °F**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-040- Aluminum: 0.05 - 1.00 mg/l

Reagents Kit Reference: 1MS303
Preparation Time: ~ 5min

UVILINE**NECESSARY REAGENTS**

Aluminum Buffer Reagent	1RA010
Aluminum 1 Reagent	1RA021
Aluminum 2 Reagent	1RA030

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 6 drops of Aluminum Buffer Reagent.
Homogenize.
Add 6 drops of Aluminum 1 Reagent.
Homogenize.
Add 12 drops of Aluminum 2 Reagent.
Homogenize.
Fill a measuring cell with this preparation.
Wait 4 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **040 Al: 0.05 - 1.00 mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

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

UVILINE

Reagents Kit Reference: 1MS304
Preparation Time: ~ 9min

NECESSARY REAGENTS

Aluminum Tablet n°1 and n°2	1AP166
Demineralized water	1ED010

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Graduated pipette 1/10 1ml	1PG000
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Dilute the sample by a factor of 10 then take 10 ml and put it in the erlenmeyer.
Add 1 Aluminum Tablet n°1, crush it well 2 minutes with the crushing rod and shake to dissolve.
~ 1.5min
After complete dissolution of the tablet N°1, add 1 Aluminum n°2 tablet, crush it with the crushing rod and stir with the rod to dissolve well the tablet and degas completely.
Fill a measuring cell with this preparation.
Wait 5 minutes after crushing the Aluminum n°2 tablet (All the bubbles stemming from the effervescence must have disappeared).
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **041 Al: 0.20- 3.00 mg/L**
Fill a cell with the sample diluted by a factor of ten without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

NOTA - Interference: Fluoride and Polyphosphates

U-042 - Aluminum: 0.02 - 0.30 mg/L Al**UVILINE**

Reagents Kit Reference: 1MS304
Preparation Time: ~ 8min

NECESSARY REAGENTS

Aluminum Tablet n°1 and n°2 1AP166

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 1 Aluminum Tablet n°1, crush it well 2 minutes with the crushing rod and shake to dissolve.
~ 1.5min
After complete dissolution of the tablet N°1, add 1 Aluminum n°2 tablet, crush it with the crushing rod and stir with the rod to dissolve well the tablet and degas completely.
Fill a measuring cell with this preparation.
Wait 5 minutes after crushing the Aluminum n°2 tablet (All the bubbles stemming from the effervescence must have disappeared).
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **042 Al: 0.02 - 0.30 mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

NOTA - Interference: Fluoride and Polyphosphates

U-050 - Ammonium: 0.05 - 2.00mg/ NH_4^+
U-060 - Ammonium: 0.04 - 1.60 mg/l $\text{NH}_4\text{-N}$

UVILINE

Reagents Kit Reference: 1MS306
 1MS358 (for sea water)

Preparation Time: ~ 11min

NECESSARY REAGENTS

Ammonia Tablet 1 and 2	1AP152
Ammonia Conditionning Reagent	1AT170

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

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 Tablet 1 and 2, crush them with the crushing rod and shake to dissolve. ~1min

Fill a measuring cell with this preparation.

Wait 10 minutes.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis

050 NH_4 : 0.10 -2.00 mg/L
 or **060 $\text{NH}_4\text{-N}$:0.08 -1.60mg/L (Result in mg/L of N)**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-051 - Ammonium: 0.30 - 6.00mg/L NH_4^+
U-061 - Ammonium: 0.20 - 4.80 mg/L N- NH_4

UVILINE

Reagents Kit Reference: 1MS305
 Preparation Time: ~ 6 min

NECESSARY REAGENTS

Seignette Salt Reagent	1SD010
Nessler Reagent	1RD002

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
 Add 6 drops of Seignette Salt Reagent
 Homogenize.
 Add 6 drops of Nessler Reagent
 Homogenize.
 Fill a measuring cell with this preparation.
 Wait 5 minutes.
 Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis
051 NH_4 : 0.30 - 6.00 mg/L
 or **061 $\text{NH}_4\text{-N}$: 0.20 - 4.80 mg/L (Result in mg/L of N)**
 Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
 Press the key « zero ».
 Remove the blank cell and put the sample cell.
 Press the key «Start»

U-052 - Ammonium: 1.00 - 30.0 mg/ NH_4^+
U-062 - Ammonium: 0.80 - 24.0 mg/l N- NH_4

UVILINE

Reagents Kit Reference: 1MS305
 Preparation Time: ~ 6 min

NECESSARY REAGENTS

Seignette Salt Reagent	1SD010
Nessler Reagent	1RD002

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 20ml	14PG09
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 12,5 ml of water to analyze and put it in the erlenmeyer.
 Add 8 drops of Seignette Salt Reagent.
 Homogenize.
 Add 8 drops of Nessler Reagent.
 Homogenize.
 Fill a measuring cell with this preparation.
 Wait 5 minutes.
 Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis
052 NH_4 : 1.00 - 30.0 mg/L
 or **062 $\text{NH}_4\text{-N}$: 0.80 - 24 mg/L** (Result in mg/L of N)
 Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
 Press the key « zero ».
 Remove the blank cell and put the sample cell.
 Press the key «Start»

U-063-Ammonium LR: 0,02-5 mg/L $\text{NH}_4^+\text{-N}$

Reagent Kit: FTI535600
Preparation Time: ~ 6 min

UVILINE

REAGENTS

Ammonia LR NH_4^+ tubes
Vario Ammonia Salicylate F5 Powder Pack
Vario Ammonia Cyanurate F5 Powder pack
Demineralized water 1ED010

RECOMMENDED EQUIPMENT (consult us)

Automatic Pipette 1 - 5 ml 1PA023
Pipette Tip 1 - 5 ml 1EU013
24 tubes stand Ø16 1PT013
Universal cell holder + 16 mm tube holder for UVILINE 70VI0609

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

In the concentration mode, select the analysis, **063 $\text{NH}_4\text{-N}$: 0,02 - 5 mg/L**
Take the tube for the blank and insert it in the spectrophotometer.
Press the key « zero ».
Remove the tube and put the sample tube to analyze.
Press the key « start ».

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 $\text{pH} > 7$) or sodium hydroxide 1 mol/L (if $\text{pH} < 7$).
Iron interferes with the test.

U-064 - Ammonium HR: 0,5-50 mg/L NH₄⁺-N

Reagent Kit : FTI535650

Temps de préparation : ~ 6 min

UVILINE

REAGENTS

Ammonia HR NH₄⁺ tubes

Vario Ammonia Salicylate F5 Powder Pack

Vario Ammonia Cyanurate F5 Powder pack

Demineralized water

1ED010

RECOMMENDED EQUIPMENT (consult us)

Automatic pipette 0,1 - 1 ml

1PA022

Pipette Tip 0,1 - 1 ml

1EU012

24 tubes stand Ø16

1PT013

Universal cell holder + 16 mm tube holder for UVILINE

70VI0609

TEST INSTRUCTIONS

Take 2 Ammonia HR NH₄⁺ 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 analyze 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

In the concentration mode, select the analysis, **064 NH₄-N: 0,5 - 50 mg/L**

Take the tube for the blank and insert it in the spectrophotometer.

Press the key « zero ».

Remove the tube and put the sample tube to analyze.

Press the key « start ».

To have the result as mg/l NH₄⁺, 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.

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

Reagents kit reference: FTI2420703
Preparation time: ~ 80 min

UVILINE

REAGENTS

Digestion tubes (empty tubes)
Blank tube (red label)
Reaction tubes
Digestion Reagent
Compensation Reagent
Nitrate-111

RECOMMENDED EQUIPMENT (consult us)

Automatic pipette 0,1 - 1 ml	1PA022
Pipette Tip 0,1 - 1 ml	1EU012
Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU013
24 tubes stand Ø16	1PT013
Wooden clamp	1PT007
Heating reactor	1RD010
Universal cell holder + 16 mm tube holder for UVILINE	70VI0609

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-treated sample.
Take 1 Reaction tube, and with the pipette, add 0,5 ml of pre-treated 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

In the concentration mode, select the analysis, **072 N : 0,3-20 mg/L**
Take the tube for the blank and insert it in the spectrophotometer.
Press the key « zero ».
Remove the tube and put the sample tube to analyze.
Press the key « start ».

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 oxidize, as may be found in industrial sewage, are not digested or only partially.

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

Reagents kit reference: FTI2420703

Preparation time: ~ 80 min

UVILINE

REAGENTS

Digestion tubes (empty tubes)

Blank tube (red label)

Reaction tubes

Digestion Reagent

Compensation Reagent

Nitrate-111

Demineralized water 1ED010

RECOMMENDED EQUIPMENT (consult us)

Automatic pipette 0,1 - 1 ml	1PA022
Pipette Tip 0,1 - 1 ml	1EU012
Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU013
24 tubes stand Ø16	1PT013
Wooden clamp	1PT007
Heating reactor	1RD010
Universal cell holder + 16 mm tube holder for UVILINE	70VI0609

TEST INSTRUCTION

Turn on the heating reactor. Preheat to 100 °C.

Take one Digestion tubes.

Put 0,5 ml of water to analyze and 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 thermo reactor with wooden clamp. (CAUTION: the tubes are hot!).

Place the tube in the tube stand and allow cooling to room temperature.

Add 1 level scoop of No. 4 (white) compensation reagent, close and shake for 30 seconds.

This is the pre-treated sample.

Take 1 reaction tube, and with the pipette, add 0,5 ml of pre-treated 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

In the concentration mode, select the analysis, **073 N: 3-200 mg/L**

Take the tube for the blank and insert it in the spectrophotometer.

Press the key « zero ».

Remove the tube and put the sample tube to analyze.

Press the key « start ».

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 oxidize, as may be found in industrial sewage, are not digested or only partially.

U-101-Bromine: 1.00-13.5 mg/L Br₂

UVILINE

Reagents Kit Reference: 1MS004
Preparation Time: ~ 7min

NECESSARY REAGENTS

DPD 1 Tablet	1D1018P
DPD Glycine Tablet	1NP000

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Total bromine test

Take 12,5 ml of water to analyze and put it in the Erlenmeyer.

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 measuring cell with this preparation.
Wait 5 minutes after crushing the tablet.
Proceed to measurement

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **101 Br₂: 1.00-13.5mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-102 - Bromine: 0.10 - 2.25 mg /LBr₂

UVILINE

Reagents Kit Reference: 1MS004

Preparation Time: ~ 4min

NECESSARY REAGENTS

DPD 1 Tablet	1D1018P
DPD Glycine Tablet	1NP000

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 20ml	14PG09
Pipette filler	1PD006
Erlenmeyer 50 ml with rubber stopper	1FE002
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Total bromine test

Take 20 ml of water to analyze and put it in the erlenmeyer.

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 measuring cell with this preparation.
Wait 2 minutes after crushing the tablet.
Proceed to the measurement

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **102 Br₂: 0.10 - 2.25 mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-110- Calcium: 20 - 200 mg/lCaCO₃

UVILINE

Reagents Kit Reference: 1MS309

Preparation Time: ~ 4min

NECESSARY REAGENTS

Calcicol 1 Tablet	1AP252
Calcicol 2 Tablet	1AP252
Demineralized water	1ED010

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018
pH Indicator paper 0 - 14	1PI110

PREPARATION OF THE SAMPLE

Dilute the sample by a factor of 10 then take 10 ml and put it in the erlenmeyer.
Check with the pH indicator test stripe that the pH is between 4 and 10 otherwise adjust 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
Fill a measuring cell with this preparation.
Wait 2 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **110 Ca: 20 - 200mg/L CaCO₃**
Fill a cell with the sample diluted by a factor of 10 without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

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

U-111 - Calcium: 2.0 -20.0mg/lCaCO₃

UVILINE

Reagents Kit Reference: 1MS309

Preparation Time: ~ 3min

NECESSARY REAGENTS

Calcicol 1 Tablet	1AP252
Calcicol 2 Tablet	1AP252

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018
pH Indicator paper 0 - 14	1PI110

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Check with the pH indicator test stripe that the pH is between 4 and 10 otherwise adjust 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
Fill a measuring cell with this preparation.
Wait 2 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **111 Ca.: 2.0- 20.0mg/L CaCO₃**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

$$\text{Concentration Ca mg/L} = \text{reading} \times 0.4$$

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

U-121 - Free chlorine and total chlorine: 0.50- 6.00 mg/L Cl₂

UVILINE

Reagents Kit Reference: 1MS116 (Free Chlorine)
1MS007 (Total Chlorine)

Preparation Time: ~ 7min

NECESSARY REAGENTS

DPD 1 Tablet (Free chlorine)	1D1018P
DPD 4 Tablet (total chlorine)	1D4004P

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 20ml	14PG09
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Free chlorine test

Take 12,5 ml of water to analyze and put it in the erlenmeyer.
Add 1 DPD 1 Tablet, crush it and shake to dissolve.
Fill a measuring cell with this preparation.
Proceed to measurement 5 minutes after crushing the tablet.

Total chlorine test

Take 12,5 ml of water to analyze and put it in the erlenmeyer.
Add 1 DPD 4 Tablet, crush it and shake to dissolve.
Fill a measuring cell with this preparation.
Proceed to measurement 5 minutes after crushing the tablet.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **121 Cl₂: 0.50- 6.00mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-122 -Free chlorine and total chlorine: 0.05- 1.00 mg /L Cl₂

UVILINE

Reagents Kit Reference: 1MS116 (Free Chlorine)
1MS007 (Total Chlorine)

Preparation Time: ~ 4min

NECESSARY REAGENTS

DPD 1 Tablet (free chlorine)	1D1018P
DPD 4 Tablet (total chlorine)	1D4004P

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 20ml	14PG09
Pipette filler	1PD006
Erlenmeyer 50 ml with rubber stopper	1FE002
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Free chlorine test

Take 20 ml of water to analyze and put it in the erlenmeyer.
Add 1 DPD 1 Tablet, crush it and shake to dissolve ~ 1min
Fill a measuring cell with this preparation.
Proceed to measurement 2 minutes after crushing the tablet.

Total chlorine test

Take 20 ml of water to analyze and put it in the erlenmeyer.
Add 1 DPD 4 Tablet, crush it and shake to dissolve ~ 1min
Fill a measuring cell with this preparation.
Proceed to measurement 2 minutes after crushing the tablet.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **122 Cl₂: 0.05 - 1.00 mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-130-Chlorides: 10 - 500 mg/L Cl⁻

Reagents Kit Reference: 1MS310
Preparation Time: ~ 5min

UVILINE**NECESSARY REAGENTS**

Chloride Reagent 1	1RC040
Chloride Reagent 2	1RC050
Demineralized water	1ED010

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Graduated pipette 1/10 1ml	1PG000
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Dilute the sample by a factor of 10 then take 10 ml and put it in the erlenmeyer.
Add 16 drops of Chloride Reagent 1.
Homogenize.
Add 16 drops of Chloride Reagent 2.
Homogenize.
Wait 3 minutes, invert the erlenmeyer once every minute to homogenize.
Fill a measuring cell with this preparation.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **130 Cl⁻ : 10 - 500mg/L**
Fill a cell with the sample diluted by a factor of ten without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

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

U-131 - Chlorides : 1.0- 50.0 mg/L Cl⁻**UVILINE**

Reagents Kit Reference: 1MS310

Preparation Time: ~ 4min

NECESSARY REAGENTS

Chloride Reagent 1	1RC040
Chloride Reagent 2	1RD050

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 16 drops of Chloride Reagent 1.

Homogenize.

Add 16 drops of Chloride Reagent 2.

Homogenize.

Wait 3 minutes, invert the erlenmeyer once every minute to homogenize.

Fill a measuring cell with this preparation.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **131 Cl⁻ : 1.0 - 50.0 mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

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

U-132 - Chlorides : 5 - 200 mg/L Cl⁻

UVILINE

Reagents Kit Reference: 1MS311

Preparation Time: ~ 5min

NECESSARY REAGENTS

Acidifying CD tablet	1AP268
Chloridol tablet	1AP268
Demineralized water	1ED010

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Graduated pipette 1/10 1ml	1PG000
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Dilute the sample by a factor of 10 then take 10 ml and put it in the erlenmeyer.

Add 1 acidifying CD Tablet, crush it and shake to dissolve ~ 1 min

Add 1 Chloridol Tablet, wait 2 minutes then crush it and shake to dissolve ~ 30 s

Fill a measuring cell with this preparation.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **132 Cl⁻ : 5 - 200 mg/L**

Fill a cell with the sample diluted by a factor of 10 without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

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

U-133 -Chlorides : 0.50-20.0 mg/L Cl⁻

UVILINE

Reagents Kit Reference: 1MS311

Preparation Time: ~ 4min

NECESSARY REAGENTS

Acidifying CD tablet	1AP268
Chloridol tablet	1AP268

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 acidifying CD Tablet, crush it and shake to dissolve ~ 1 min

Add 1 Chloridol Tablet, wait 2 minutes then crush it and shake to dissolve ~ 30 s

Fill a measuring cell with this preparation.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **133 Cl⁻ :0.50-20.0 mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

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

U-140- Chromium VI: 0.10- 4.00 mg/L Cr

UVILINE

Reagents Kit Reference: 1MS009

Preparation Time: ~ 1.5min

NECESSARY REAGENTS

Chromium 1 Reagent	1RC032
Chromium 2 Reagent	1RC033
Sodium Fluoride Reagent	1SF000

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 5ml	1PG002
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 5 ml of water to analyze and put it in the erlenmeyer.

If water contains more than 1 mg/L of iron, eliminate it by adding 3 drops of Sodium Fluoride.
Homogenize.

Add 4 drops of Chromium reagent 1.

Homogenize.

Add 5 drops of Chromium reagent 2.

Homogenize.

Fill a measuring cell with this preparation.

Wait 1 minute.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **140 Cr6: 0.10 - 4.00 mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

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

U-141 - Chromium VI: 0.05 - 2.00 mg/L Cr

UVILINE

Reagents Kit Reference: 1MS312

Preparation Time: ~ 6min

NECESSARY REAGENTS

Chromicol 1 tablet	1AP281
Chromicol 2 tablet	1AP281

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
 Add 1 Chromicol 1 Tablet, crush it and shake to dissolve ~ 30s
 Add 1 Chromicol 2 Tablet, crush it and shake to dissolve ~ 30s
 Fill a measuring cell with this preparation.
 Wait 5 minutes.
 Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **141 Cr6: 0.05 - 2.00 mg/L**
 Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
 Press the key « zero ».
 Remove the blank cell and put the sample cell.
 Press the key «Start»

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.

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

Reagents Kit Reference: 1MS313
Preparation Time: ~ 3.5min

UVILINE*NECESSARY REAGENTS*

Copper 1 Reagent	1RC060
Copper 2 Reagent	1RC070

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

*PREPARATION OF THE SAMPLE**Free Copper test*

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 5 drops of Copper 1 Reagent.
Homogenize.
Add 5 drops of Copper 2 Reagent.
Homogenize.
Fill a measuring cell with this preparation.
Wait 3 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **150 Cu: 0.05 - 5.00 mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

UVILINE

**U-151-Free Copper, Total Copper and Chelated Copper:
0.20 - 5.00 mg/L Cu**

Reagents Kit Reference: 1MS314

Preparation Time: ~ 6min

NECESSARY REAGENTS

Copper n°1 Tablet	1AP186
Copper n°2 Tablet	1AP186

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Free copper test

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 1 Copper n°1 tablet. Crush it and shake to dissolve. ~30 s
Homogenize.
Fill a measuring cell with this preparation.
Wait 5 minutes after crushing the tablet.
Proceed to measurement.

Total copper test

Take 10 ml of water to analyze and put it in the erlenmeyer
Add 1 Copper n°1 tablet. Crush it and shake to dissolve. ~30 s
Wait 5 minutes after crushing the tablet.
Add 1 Copper n°2 tablet. Crush it and shake to dissolve. ~15 s
Fill a measuring cell with this preparation.
Wait 5 minutes after crushing the tablet.
Proceed to measurement.

Chelated Copper

Chelated Copper = Total Copper - Free Copper

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **151 Cu: 0.20- 5.00 mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-160- Cyanides: 0.02 - 0.50 mg/L CN⁻

UVILINE

Reagents Kit Reference: 1MS315
Preparation Time: ~ 11min

NECESSARY REAGENTS

Cyanide n°1 Reagent	1RC005
Cyanide n°2 Reagent	1RC008
Cyanide n°3 Reagent	1RC011
Cyanide Buffer Reagent	1RC018

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic spoon	1J0000

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it into the erlenmeyer.
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 spoonful 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 measuring cell with this preparation.
Proceed to measurement

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **160 CN-: 0.02 - 0.50 mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-174 - DCO HR: 0,5 - 15 g/L O₂ (500 - 15000 mg/L O₂)

UVILINE

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	
Demineralized water	1ED010

RECOMMENDED EQUIPMENT (consult us)

Automatic pipette 0,1 - 1 ml	1PA022
Pipette Tip 0,1 - 1 ml	1EU012
24 tubes stand Ø16	1PT013
Wooden clamp	1PT007
Heating reactor	1RD010
Universal cell holder + 16 mm tube holder for UVILINE	70VI0609

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 graduated pipette, put 0,2mL of demineralized water in the tube for the blank, close and shake gently the tube. Likewise, put 0,2mL of water to analyze in the tube for the sample.

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

Put the tubes in the heating reactor at 150°C during 120minutes.

After 120 minutes, take the tubes with the wooden clamp (be careful, they are very hot) and shake gently. Put the tube in the tube stand et let cool to room temperature (>20 minutes).

MEASUREMENT

In the concentration mode, select the analysis, **174 DCO: 0,5-15g/L**

Take the tube for the blank and insert it in the spectrophotometer.

Press the key « zero ».

Remove the tube and put the sample tube to analyze.

Press the key « start ».

INTERFERENCES

Suspended solids in the vial lead to incorrect measurements. For this reason it is important to place the vials 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.

For a better precision:

If the sample is DCO < 1g/L, we advice to make the analysis with the kit DCO MR.

If the sample is DCO < 0,1g/L, we advice to make the analysis with the kit DCO LR.

U-175 - DCO MR: 50 - 1500 mg/L O₂

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

UVILINE

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

REAGENTS

Reaction tubes
Demineralized water 1ED010

RECOMMENDED EQUIPMENT (consult us)

Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU013
24 tubes stand Ø16	1PT013
Wooden clamp	1PT007
Heating reactor	1RD010
Universal cell holder + 16 mm tube holder for UVILINE	70VI0609

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 careful, 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 careful, they are very hot) and shake gently. Put the tubes in the tube stand et let cool to room temperature (>20 minutes).

MEASUREMENT

In the concentration mode, select the analysis, **175 DCO: 50-1500 mg/L**
Take the tube for the blank and insert it in the spectrophotometer.
Press the key « zero ».
Remove the tube and put the sample tube to analyze.
Press the key « start ».

INTERFERENCES

Suspended solids in the vial lead to incorrect measurements. For this reason it is important to place the vials 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.

For a better precision:

If the sample is DCO < 100mg/L, we advice to make the analysis with the kit DCO LR

UVILINE**U-176 - DCO LR: 5 - 150 mg/L O₂**

Reagents kit reference: 12DC00 or FTI2420720

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	
Demineralized water	1ED010

RECOMMENDED EQUIPMENT (consult us)

Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU013
24 tubes stand Ø16	1PT013
Wooden clamp	1PT007
Heating reactor	1RD010
Universal cell holder + 16 mm tube holder for UVILINE	70VI0609

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 careful, 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 careful, they are very hot) and shake gently. Put the tubes in the tube stand et allow to cool to room temperature (>20 minutes).

MEASUREMENT

In the concentration mode, select the analysis, **176 DCO: 5-150 mg/L**

Take the tube for the blank and insert it in the spectrophotometer.

Press the key « zero ».

Remove the tube and put the sample tube to analyze.

Press the key « start ».

INTERFERENCE

Suspended solids in the vial lead to incorrect measurements. For this reason it is important to place the vials 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.

U-180 - DEHA: 0.05- 1.00 mg/L

UVILINE

Reagents Kit Reference: 1MS112

Preparation Time: ~ 11.5min

NECESSARY REAGENTS

DEHA n°1 Reagent	1RD012
DEHA n°2 Reagent	1RD013

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic spoon	1J0000

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer
 Add 1 spoonful of DEHA n°1 Reagent and shake strongly ~30 s
 Add 5 drops of DEHA n°2 Reagent, and shake
 Wait 10 minutes, inverting the erlenmeyer every minute to homogenize.
 Fill a measuring cell with this preparation.
 Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **180 DEHA: 0.05 - 1.00 mg/L**
 Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
 Press the key « zero ».
 Remove the blank cell and put the sample cell.
 Press the key «Start»

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 overestimated 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		

U-191 - Chlorine Dioxide : 2.4-28.5mg/L ClO₂**UVILINE**

Reagents Kit Reference: 1MS069

Preparation Time: ~ 7min

NECESSARY REAGENTS

DPD 1 Tablet	1D1018P
Glycine Tablet	1NP000

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 20ml	14PG09
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 12.5 ml of water to analyze

Add 1 Glycine Tablet and shake until it is dissolved~ 1min

Add 1 DPD 1 Tablet and shake until it is dissolved~ 1min

Fill a measuring cell with this preparation.

Proceed to measurement 5 minutes after crushing the tablet.

MEASUREMENT OF THE BLANK AND THE SAMPLEIn the concentration mode, select the analysis **191 ClO₂ : 2.40- 28.5 mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-192 - Chlorine Dioxide: 0.20 - 4.75 mg/L ClO₂**UVILINE**

Reagents Kit Reference: 1MS069

Preparation Time: ~ 4min

NECESSARY REAGENTS

DPD 1 Tablet	1D1018P
Glycine Tablet	1NP000

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 20ml	14PG09
Pipette filler	1PD006
Erlenmeyer 50 ml with rubber stopper	1FE002
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 20 ml of water to analyze

Add 1 Glycine Tablet, crush it and shake to dissolve ~ 1min

Add 1 DPD 1 Tablet, crush it and shake to dissolve ~ 1min

Fill a measuring cell with this preparation.

Proceed to measurement 2 minutes after crushing the tablet.

*MEASUREMENT OF THE BLANK AND THE SAMPLE*In the concentration mode, select the analysis **192 ClO₂ : 0.20 - 4.75 mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-200 - Total Hardness - TH: 5.0 - 50.0°F**UVILINE**

Reagents Kit Reference: 1MS047

Preparation Time: ~ 5min

NECESSARY REAGENTS

Hardicol n°1 Tablet	1AP254
Hardicol n°2 Tablet	1AP254
Demineralized water	1ED010

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Graduated pipette 1/10 5ml	1PG002
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Dilute 4 parts of the sample with 6 parts of demineralized water (40 ml sample in 60 ml demineralized water for example) then take 10 ml and put it in the erlenmeyer.

Add 1 Hardicol n°1 Tablet, crush it and shake to dissolve ~ 1min

Add 1 Hardicol n°2 Tablet, crush it and shake to dissolve.~ 30s

Make sure that they are well dissolved.

Fill a measuring cell with this preparation.

Wait 2 minutes.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **200 TH: 5.0 - 50.0 °F**

Fill a measuring cell with the diluted water to analyze (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

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.

U-201- Total Hardness - TH: 2.0- 20.0°F

UVILINE

Reagents Kit Reference: 1MS047
Preparation Time: ~ 4min

NECESSARY REAGENTS

Hardicol Tablet n°1	1AP254
Hardicol Tablet n°2	1AP254

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Graduated pipette 1/10 5ml	1PG002
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 1 Hardicol Tablet n°1. Crush it and shake to dissolve. ~ 1min
Add 1 Hardicol Tablet n°2. Crush it and shake to dissolve. ~ 30s
Make sure the tablets are well dissolved.
Fill a measuring cell with this preparation.
Wait 2 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **201 TH: 2.0 - 20.0 °F**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

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.

U-210 - Iron : 0.05 - 5.00 mg/L Fe²⁺ Fe³⁺**UVILINE**

Reagents Kit Reference: 1MS317

Preparation Time: ~ 3min

NECESSARY REAGENTS

Ferrordis Reagent 14F600

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
pH indicator test strips 0-14	1PI110

PREPARATION OF THE SAMPLE

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 10 ml of water to analyze and put it in the erlenmeyer.

Add 6 drops of Ferrordis Reagent

Homogenize

Fill a measuring cell with this preparation.

Wait 2 minutes.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **210 Fe: 0.05- 5.00mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-211 - Iron: 0.2 - 20.0 mg/L Fe²⁺ Fe³⁺**UVILINE**

Reagents Kit Reference: 1MS318
Preparation Time: ~ 4min

NECESSARY REAGENTS

Iron 1 HR Tablet 1AP156

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018
pH indicator test strips 0-14	1PI110

PREPARATION OF THE SAMPLE

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 10 ml of water to analyze and put it in the erlenmeyer.
Add 1 Iron 1 HR Tablet, crush it and shake to dissolve. ~ 3 min
Fill a measuring cell with this preparation.
Wait 1 min
Proceed to measurement

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **211 Fe: 0.2- 20.0 mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-212 - Iron: 0.05 - 5.00 mg/L Fe²⁺ Fe³⁺**UVILINE**

Reagents Kit Reference: 1MS319

Preparation Time: ~ 7min

NECESSARY REAGENTS

Iron MR 1 Tablet	1AP292
Iron MR 2 Tablet	1AP292

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 Iron MR1 crush it and shake to dissolve. ~ 30 s

Add 1 Iron MR2 crush it and shake to dissolve. ~ 1min

Fill a measuring cell with this preparation.

Wait 5 min

Proceed to measurement

MEASUREMENT OF THE BLANK AND THE SAMPLEIn the concentration mode, select the analysis **212 Fe: 0.05 - 5.00 mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-220- Fluorides: 0.10- 2.00 mg/L F⁻**UVILINE**

Reagents Kit Reference: 1MS110

Preparation Time: ~ 5.5min

NECESSARY REAGENTS

Fluorides test tube

NECESSARY EQUIPMENT (consult us)

Graduated pipette 2 ml	1PG001
Macropipette	1T0007

or

Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU013

PREPARATION OF THE SAMPLE

Take 2 test tubes

Take 2 ml of demineralized water, put it in a test tube (blank tube), and take 2 ml of water to analyze, put it in the other test tube (sample tube)

Close the tubes, invert them 3 times to homogenize

Wait 5 minutes.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLEIn the concentration mode, select the analysis **220 F⁻ :0.10- 2.00mg/L**

Insert the blank tube

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

Nota: Aluminum, calcium and iron disturb the reaction and lead to underestimated results.

Nitrates interfere when superior to 100 mg/l.

U-221 - Fluorides: 0.20- 2.00 mg/L F⁻

UVILINE

Reagents Kit Reference: 1MS320
Preparation Time: ~ 7min

NECESSARY REAGENTS

Fluoride 1 Tablet	1AP179
Fluoride 2 Tablet	1AP179

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 1 Fluoride 1 Tablet, crush it and stir with the crushing rod until it is dissolved. ~ 30 s
Don't shake the erlenmeyer to avoid the formation of foam
Add 1 Fluoride 2 Tablet, crush it and stir with the crushing rod until it is dissolved. ~ 90 s
Don't shake the erlenmeyer to avoid the formation of foam
Fill a measuring cell with this preparation.
Wait 5 min
Proceed to measurement

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **221 F⁻: 0.20- 2.00 mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-230- Hydrazine: 0.10-2.00 mg/L N₂H₄

Reagents Kit Reference: 1MS323
Preparation Time: ~ 3min

UVILINE

NECESSARY REAGENTS

DAB Indicator 1ID003

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 5ml	1PG002 *2
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 5 ml of water to analyze and put it in the erlenmeyer.
Add 5 ml of DAB Indicator and put it in the erlenmeyer.
Homogenize
Fill a measuring cell with this preparation.
Wait 2 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **230 N₂H₄: 0.10 - 2.00mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-240 - Magnesium: 5.0 - 50.0 mg/L Mg**UVILINE**

Reagents Kit Reference: 1MS325

Preparation Time: ~ 5min

NECESSARY REAGENTS

Magnecol Tablet	1AP193
Demineralized water	1ED010

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Graduated pipette 1/10 1ml	1PG000
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Dilute the sample by a factor of 10 then take 10 ml and put it in the erlenmeyer.

Add 1 Magnecol Tablet, crush it and shake to dissolve. ~ 1min

Fill a measuring cell with this preparation.

Wait 3 minutes

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **240 Mg: 5.00 - 50.0mg/L**

Fill a cell with the sample diluted by a factor of 10 without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-241 - Magnesium: 0.50- 5.00 mg/L Mg**UVILINE**

Reagents Kit Reference: 1MS325

Preparation Time: ~ 4 min

NECESSARY REAGENTS

Magnecol	1AP193
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NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 1 Magnecol Tablet, crush it and shake to dissolve. ~ 1 min
Fill a measuring cell with this preparation.
Wait 3 minutes
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **241 Mg: 0.05-5.00mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-250 - Manganese: 0.20- 5.00 mg/L Mn**UVILINE**

Reagents Kit Reference: 1MS326

Preparation Time: ~ 6min

NECESSARY REAGENTS

Manganese 1 Reagent	1RM007
Manganese 2 Reagent	1RM008
Manganese 3 Reagent	1RM009

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze, and put it in the erlenmeyer.

Add 8 drops of Manganese 1 Reagent

Homogenize

Add 8 drops of Manganese 2 Reagent

Homogenize.

Wait 2 minutes.

Add 8 drops of Manganese 3 Reagent

Homogenize

Fill a measuring cell with this preparation.

Wait 5 minutes.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **250 Mn: 0.20 - 5.00mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

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.

U-251 - Manganese: 0.10- 8.00 mg/L Mn**UVILINE**

Reagents Kit Reference: 1MS327

Preparation Time: ~ 6min

NECESSARY REAGENTS

Manganese HR 1 Tablet	1AP174
Manganese HR 2 Tablet	1AP174

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 Manganese HR 1Tablet. Crush it well and shake to dissolve. ~ 45s

Add 1 Manganese HR 2Tablet. Crush it well and shake to dissolve. ~ 45 s

Fill a measuring cell with this preparation.

Wait 5 minutes.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **251 Mn: 0.10- 8.00mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-260 - Molybdates: 0.8 -165 mg/L MoO₄

U-270 - Molybdates : 0.5 -100 mg/L Mo

UVILINE

Reagents Kit Reference: 1MS329

Preparation Time: ~ 1min

NECESSARY REAGENTS

Molybdate Compensator Reagent	1RM010
Molybdate Reagent	1RM016

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 5 drops of Molybdate Compensator Reagent.

Homogenize

Add 5 drops of Molybdate Reagent.

Homogenize

Fill a measuring cell with this preparation.

Wait 1 minute.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis

260 MoO₄:0.8-165.0mg/L
or **270 MoO₄-Mo: 0.5 - 100.0 mg/L** (Result in mg/L of Mo)

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

Concentration Na₂MoO₄ mg/l = Concentration MoO₄ mg/l x 1,3

U-261 - Molybdates: 5.0-100 mg/L MoO₄

U-271 - Molybdates: 3.0 - 60.0 mg/L Mo

UVILINE

Reagents Kit Reference: 1MS330

Preparation Time: ~ 2min

NECESSARY REAGENTS

Molybdate n°1 Tablet	1AP175
Molybdate n°2 Tablet	1AP175

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 Molybdate n°1 Tablet. Crush it well and shake to dissolve ~ 1min

Add 1 Molybdate n°2 Tablet. Crush it well and shake to dissolve ~ 1min

Fill a measuring cell with this preparation.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis

261 MoO₄ :5.0 - 100mg/L

or **271 MoO₄-Mo : 3.0- 60.0 mg/L** (Result in mg/L of Mo)

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

Concentration Na₂MoO₄ mg/l = Concentration MoO₄ mg/l x 1,3

U-262 - Molybdates: 30 - 330 mg/L MoO₄

U-272 - Molybdates: 20 - 200 mg/L Mo

UVILINE

Reagents Kit Reference: 1MS329

Preparation Time: ~ 1.5 min

NECESSARY REAGENTS

Molybdate Compensator Reagent	1RM010
Molybdate Reagent	1RM016

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 5 drops of Molybdate Compensator Reagent.

Homogenize.

Add 5 drops of Molybdate Reagent.

Homogenize.

Fill a measuring cell with this preparation.

Wait 1 minute.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis

262 MoO₄ : 30 - 330 mg/L
or **272 MoO₄-Mo : 20 - 200 mg/L** (Result in mg/L of Mo)

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

Concentration Na₂MoO₄ mg/l = Concentration MoO₄ mg/l x 1,3

U-280- Nickel: 0.10-5.00 mg/L Ni

UVILINE

Reagents Kit Reference: 1MS331
Preparation Time: ~ 4min

NECESSARY REAGENTS

Nickel 1 Reagent	1RN011
Nickel 2 Reagent	1RN012

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018
Plastic spoon	1J0000

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 1 spoonful to the brim of Nickel 1 Reagent and shake well.
Add 10 drops of Nickel 2 Reagent, and shake (sample turns orange).
Fill a measuring cell with this preparation.
Wait 3 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **280 Ni: 0.10 - 5.0mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

INTERFERENCES

Interferences happen when:

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

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

UVILINE

Reagents Kit Reference: 1MS332

Preparation Time: ~3 min

NECESSARY REAGENTS

Nickeltest 1 Tablet	1AP284
Nickeltest PR POWDER	1AP284
Nickeltest 2 Tablet	1AP284

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 Nickeltest 1 Tablet, crush it and shake to dissolve.~30 s

Only if the sample contains iron Add 1 spoonful of Nickeltest PR POWDER and shake.

Add 1 Nickeltest 2 Tablet, crush it with the crushing rod and shake to dissolve~ 30 s

Fill a measuring cell with this preparation.

Wait 2 minutes.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **281 Ni: 0.50- 10mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

INTERFERENCES

Interferences happen when:

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

U-290 - Nitrates : 0.50 - 5.00 mg/L NO₃⁻
U-300 - Nitrates : 0.10 - 1.00 mg/L NO₃⁻-N

UVILINE

Reagents Kit Reference: 1MS333
 Preparation Time: ~ 17min

NECESSARY REAGENTS

Nitratetest Powder	1AP163
Nitratetest Tablet	1AP163
Nitricol Tablet	1AP163

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 20ml	14PG09
Graduated pipette 1/10 1ml	1PG000
Pipette filler	1PD006
Erlenmeyer 50 ml with rubber stopper	1FE002
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 20 ml of water to analyze and put it in the 50 ml erlenmeyer.
 Add 1 spoonful of Nitratetest Powder and 1 Nitratetest tablet (from the white flask). Don't crush the tablet. Close the erlenmeyer and shake for 1 minute.
 Wait 1 minute, and then invert the tube 4 times to allow the flocculation. Wait until the liquid is clear (~2 minutes).
 Pour carefully 10 ml of the clear solution in the 25 ml erlenmeyer.
 Add 1 Nitricol tablet, crush it with the crushing rod and shake to dissolve.
 Fill a cell with this preparation.
 Wait 10 minutes (after crushing the Nitricol tablet)
 Proceed to the measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis
290 NO₃ :0.50 - 5.00 mg/L
 or **300 NO₃-N :0.10 -1.00 mg/L (Result in mg/L of N)**
 Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder. Press the key « zero ».
 Remove the blank cell and put the sample cell.
 Press the key «Start»

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 it is possible to determine the concentration (mg / l N) of nitrite and then deduct the value of the content (in mg / l N) nitrate.

U-291 - Nitrates : 0.25 - 10 mg/L NO₃⁻

U-301 - Nitrates : 0.06 - 2.30 mg/L NO₃⁻-N

Compatible with sea water

UVILINE

Reagents Kit Reference: 1MS350

Preparation Time: ~ 10 min

NECESSARY REAGENTS

Nitrates 1 Reagent	1RN015
Nitrate Powder Reagent	1PN011

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001 *2
Syringe 10ml	1SU013
Filter holder	14PF09
Filter paper	14PF05
Clamp	1PM010
Plastic spoon	1J0000

PREPARATION OF THE SAMPLE

Take the filter holder, unscrew it and introduce the filter paper, screw the bracket.

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 spoon of Nitrate Powder Reagent

Shake 1 minute.

Take with the syringe at least 5 ml. Put the filter holder on the syringe, filter 5 ml and put it in the second erlenmeyer.

Add 5ml of Nitrate 1 Reagent and shake.

Fill a measuring cell with this preparation.

Wait 3 minutes.

Proceed to measurement.

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

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis

291 NO₃ : 0.25 - 10 mg/L

or **301 NO₃-N : 0.06 - 2.30 mg/L** (Result in mg/L of N)

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

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 it is possible to determine the concentration (mg / l N) of nitrite and then deduct the value of the content (in mg / l N) nitrate.

U-292 - Nitrates : 2.5 - 100 mg/L NO₃⁻
U-303 - Nitrates : 0.6 - 23.0 mg/L NO₃⁻-N
 Compatible with sea water

UVILINE

Reagents Kit Reference: 1MS350
 Preparation Time: ~ 10 min

NECESSARY REAGENTS

Nitrates 1 Reagent	1RN015
Nitrate Powder Reagent	1PN011
Demineralized water	1ED010

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 1ml	1PG000
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001 *2
Syringe 10ml	1SU013
Filter Holder	14PF09
Filter Paper	14PF05
Clamp	1PM010
Plastic spoon	1J000

PREPARATION OF THE SAMPLE

Take the filter holder, unscrew it and introduce the filter paper, screw the bracket.
 Dilute the sample water by a factor of 10 then take 10 ml and put it in the erlenmeyer.
 Add 1 spoon of Nitrate Powder Reagent
 Shake 1 minute
 Take with the syringe at least 5 ml. Put the filter holder on the syringe, filter 5 ml and put it in the second erlenmeyer.
 Add 5ml of Nitrate 1 Reagent and shake.
 Fill a measuring cell with this preparation.
 Wait 3 minutes.
 Proceed to measurement.
 Unscrew the filter holder, remove the soiled filter and clean all the water.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis
292 NO₃ : 2.5 - 100 mg/L
 or **303 NO₃-N : 0.6 - 23.0 mg/L** (Result in mg/L of N)
 Fill a cell with the sample diluted by a factor of 10 without reagent (blank cell) and put it in the cell holder.
 Press the key « zero ».
 Remove the blank cell and put the sample cell.
 Press the key «Start»

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 it is possible to determine the concentration (mg / l N) of nitrite and then deduct the value of the content (in mg / l N) nitrate.

U-293 - Nitrates: 4.0 - 100 mg/L NO₃⁻
U-302 - Nitrates: 1.0 – 22.5 mg/L NO₃⁻-N

UVILINE

Reagents Kit Reference: 1MS333
 Preparation Time: ~ 17 min

NECESSARY REAGENTS

Poudre Nitratest	1AP163
Nitratest Tablet	1AP163
Nitricol Tablet	1AP163
Demineralized water	1ED010

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 20ml	14PG09
Graduated pipette 1/10 1ml	1PG000
Pipette filler	1PD006
Erlenmeyer 50 ml with rubber stopper	1FE002
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Dilute the sample by a factor of 20 (5 ml sample / 95 ml demineralized water for example) then take 20 ml and put it in the 50 ml erlenmeyer.

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, and then invert the tube 4 times to allow the flocculation. Wait until the liquid is clear (~2 minutes).

Pour carefully 10 ml of the clear solution in the 25ml erlenmeyer.

Add 1 Nitricol tablet, crush it with the crushing rod and shake to dissolve.

Fill a cell with this preparation.

Wait 10 minutes (after crushing the Nitricol tablet)

Proceed to the measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis

293 NO₃ : 4.0 - 100 mg/L
 or **302 NO₃ : 1.0 – 22.5 mg/L** (Result in mg/L of N)

Fill a measuring cell with the sample diluted by a factor of 20 without reagent and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

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 it is possible to determine the concentration (mg / l N) of nitrite and then deduct the value of the content (in mg / l N) nitrate.

U-306 - Nitrates : 0,02 - 20 mg/L NO₃⁻-N

Reagents kit reference: FTI2420702
Preparation time: ~ 5min

UVILINE**REAGENTS**

Reaction tube
Blank Tube (red label)
Nitrate-111

RECOMMENDED EQUIPMENT (consult us)

Automatic pipette 0,1 - 1 ml	1PA022
Pipette Tip 0,1 - 1 ml	1EU012
24 tubes stand Ø16	1PT013
Universal cell holder + 16 mm tube holder for UVILINE	70VI0609

TEST INSTRUCTIONS

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

Be careful, 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

In the concentration mode, select the analysis, **306 NO₃ -N: 0,02 - 20 mg/L**
Take the tube for the blank and insert it in the spectrophotometer.
Press the key « zero ».
Remove the tube and put the sample tube to analyze.
Press the key « start ».

To have the result as mg/L NO₃⁻, multiply the result by 4,4

INTERFERENCES

Nitrite concentrations greater than 2 mg/L NO₂⁻ lead to higher test results. Great quantities of COD lead to higher test results.

U-310 - Nitrites: 0.05 - 2.00 mg/L NO₂
U-320 - Nitrites: 0.01 - 0.60 mg/L NO₂-N
 Compatible with sea water

UVILINE

Reagents Kit Reference: 1MS334
 Preparation Time: ~ 6min

NECESSARY REAGENTS

Concentrated Ammonia	1AC030
Indicator Z	1IZ000

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
 Add 7 drops of indicator Z.
 Homogenize
 Wait 5 minutes.
 Add 7 drops of Concentrated Ammonia.
 Homogenize
 Fill a measuring cell with this preparation.
 Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis
310 NO₂ : 0.05 - 2.00 mg/L
 or **320 NO₂ -N : 0.01 - 0.60 mg/L** (Result in mg/L of N)
 Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
 Press the key « zero ».
 Remove the blank cell and put the sample cell.
 Press the key «Start»

U-311- Nitrites: 0.05 -2.00mg/L NO₂
U-321- Nitrites: 0.01- 0.60 mg/L NO₂ -N

UVILINE

Reagents Kit Reference: 1MS335
 Preparation Time: ~ 11min

NECESSARY REAGENTS

Nitricol Tablet 1AP109

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
 Add 1 Nitricol Tablet, crush it then shake till it is totally dissolved
 Fill a measuring cell with this preparation.
 Wait 10 min
 Proceed to measurement

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis
311 NO₂ : 0.05 - 2.00 mg/L
 or **321 NO₂ -N : 0.01 - 0.60 mg/L** (Result in mg/L of N)
 Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
 Press the key « zero ».
 Remove the blank cell and put the sample cell.
 Press the key «Start»

U-312- Nitrites: 0.4 – 4.1 mg/L NO₂
U-322- Nitrites: 1.3 - 130 mg/L NO₂ -N

UVILINE

Reagents Kit Reference: 1MS336
 Preparation Time: ~ 3min

NECESSARY REAGENTS

Nitriphot 1 Tablet	1AP260
Nitriphot 2 Tablet	1AP260

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
 Add 1 Nitriphot 1 Tablet, crush it and shake till it is totally dissolved.
 Add 1 Nitriphot 2 Tablet, crush it and shake till it is totally dissolved.
 Fill a measuring cell with this preparation.
 Wait 1 minute.
 Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis
312 NO₂ : 0.4 – 4.1 mg/L
 or **322 NO₂-N : 1.3 - 130 mg/L** (Result in mg/L of N)
 Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
 Press the key « zero ».
 Remove the blank cell and put the sample cell.
 Press the key «Start»

U-313- Nitrites: 4 - 410 mg/L

U-323 - Nitrites: 13 - 1330 mg/L NO₂ -N

UVILINE

Reagents Kit Reference: 1MS336

Preparation Time: ~ 3min

NECESSARY REAGENTS

Nitriphot 1 Tablet	1AP260
Nitriphot 2 Tablet	1AP260

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Graduated pipette 1/10 1ml	1PG000
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Dilute by a factor of 10 the water to analyze then take 10 ml and put it in the erlenmeyer.

Add 1 Nitriphot 1 Tablet, crush it and shake till it is totally dissolved

Add 1 Nitriphot 2 Tablet, crush it and shake till it is totally dissolved

Fill a measuring cell with this preparation.

Wait 1 minute

Proceed to measurement

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis

313 NO₂ : 4 - 410 mg/L
or **323 NO₂ -N : 13 - 1330 mg/L** (Result in mg/L of N)

Fill a cell with the sample diluted by a factor of 10 without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-324 - Nitrites LR : 0,01- 1 mg/L NO₂⁻-N

Reagents kit reference: FTI2419018
Preparation time: ~ 12min

UVILINE*REAGENTS*

Reaction tubes
Blank Tube (red label)
Nitrite-101

RECOMMENDED EQUIPMENT (consult us)

Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU013
24 tubes stand Ø16	1PT013
Universal cell holder + 16 mm tube holder for UVILINE	70VI0609

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

In the concentration mode, select the analysis, **324 NO₂ -N: 0,01 - 1 mg/L**

Take the tube for the blank and insert it in the spectrophotometer.

Press the key « zero ».

Remove the tube and put the sample tube to analyze.

Press the key « start ».

To have the result as mg/L NO₂⁻, multiply the result by 3,3

U-325 - Nitrites HR : 0,1- 5 mg/L NO₂⁻-N

Reagents kit reference: FTI2419018
Preparation time: ~ 12min

UVILINE*REAGENTS*

Reaction tubes
Blank Tube (red label)
Nitrite-101

RECOMMENDED EQUIPMENT (consult us)

Automatic pipette 0,1 - 1 ml	1PA022
Pipette Tip 0,1 - 1 ml	1EU012
24 tubes stand Ø16	1PT013
Universal cell holder + 16 mm tube holder for UVILINE	70VI0609

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

In the concentration mode, select the analysis, **325 NO₂ -N: 0,1 - 5mg/L**

Take the tube for the blank and insert it in the spectrophotometer.

Press the key « zero ».

Remove the tube and put the sample tube to analyze.

Press the key « start ».

To have the result as mg/L NO₂⁻, multiply the result by 3,3

U-331- Ozone: 0.30-4.00 mg/L O₃

UVILINE

Reagents Kit Reference: 1MS337

Preparation Time: ~ 6min

NECESSARY REAGENTS

DPD 4 Tablet	1D4004P
Glycine Tablet	1NP000

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 20ml	14PG09
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

1- TOTAL CHLORINE + OZONE

Take 12,5 ml of water to analyze and put it in the erlenmeyer.

Add 1 DPD 4Tablet and shake until it is dissolved

Fill a measuring cell with this preparation.

Wait 5 minutes.

Proceed to measurement.

This gives **Value 1**: total chlorine + ozone in mg/l of O₃

2- TOTAL CHLORINE ONLY

Take 12,5 ml of water to analyze and put it in the erlenmeyer.

Add 1 DPD 4Tablet and shake until it is dissolved

Add 1 DPD GlycineTablet and shake until it is dissolved

Fill a measuring cell with this preparation.

Wait 5 minutes.

Proceed to measurement.

This gives **Value 2**: total chlorine in mg/l of O₃

3- OZONE

Result: **Concentration in mg/l of O₃ = value 1 - value 2**

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **331 O₃: 0.30 - 4.00mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-332 -Ozone: 0.03-0.65 mg/L O₃

UVILINE

Reagents Kit Reference: 1MS337
Preparation Time: ~ 4min

NECESSARY REAGENTS

DPD 4 Tablet	1D4004P
Glycine Tablet	1NP000

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 20ml	14PG09
Pipette filler	1PD006
Erlenmeyer 50 ml with rubber stopper	1FE002
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

1- TOTAL CHLORINE + OZONE

Take 20.0 ml of water to analyze
Add 1 DPD 4Tablet and shake until it is dissolved
Fill a measuring cell with this preparation..
Wait 2 minutes.
Proceed to measurement.
This gives **Value 1**: total chlorine + ozone in mg/l of O₃

2- TOTAL CHLORINE ONLY

Take 20.0 ml of water to analyze
Add 1 DPD 4and shake until it is dissolved
Add 1 DPD Glycine and shake until it is dissolved
Fill a measuring cell with this preparation.
Wait 2 minutes.
Proceed to measurement.
This gives **Value 2**: total chlorine in mg/l of O₃

3- OZONE

Result: **Concentration in mg/l of O₃ = value 1 - value 2**

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **332 O₃ :0.03 - 0.65mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-340-Hydrogen Peroxide: 2 - 200 mg/l H₂O₂**UVILINE**

Reagents Kit Reference: 1MS321

Preparation Time: ~ 1.5min

NECESSARY REAGENTS

Acidifying PT Tablet	1AP105
Hydrogen Peroxyde HR Tablet	1AP105

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 Acidifying PT Tablet, crush it and shake till it is totally dissolved.

Add 1 Hydrogen Peroxyde HR Tablet, crush it and shake till it is totally dissolved

Fill a measuring cell with this preparation.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **340 H₂O₂ : 2 - 200mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-341-Hydrogen Peroxide: 0.05 - 5.00 mg/l H₂O₂**UVILINE**

Reagents Kit Reference: 1MS322

Preparation Time: ~ 2.5min

NECESSARY REAGENTS

Hydrogen Peroxyde LR Tablet	1AP104
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NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 Hydrogen Peroxyde LR, crush it and shake till it is totally dissolved.

Fill a measuring cell with this preparation.

Wait 2 minutes.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **341 H₂O₂ : 0.05 - 5.00mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-370 - Phosphates: 0.20 - 4.00 mg/L PO₄³⁻
U-390 - Phosphates: 0.06 - 1.30 mg/L PO₄³⁻-P

UVILINE

Reagents Kit Reference: 1MS354
 Preparation Time: ~ 5 min

NECESSARY REAGENTS

Phosphate 1 Tablet	1AP177
Phosphate 2 Tablet	1AP177

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
 Add 1 Phosphate 1, crush it and shake till it is totally dissolved.
 Add 1 Phosphate 2, crush it and shake till it is totally dissolved.
 Fill a measuring cell with this preparation.
 Wait 1 minute.
 Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis

370 PO₄ : 0.20- 4.00mg/L
 or **390 PO₄-P 0.65 - 1.30 mg/L (Result in mg/L of P)**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-371 - Phosphates: 0.20 - 5.00 mg/L PO₄³⁻
U-391 - Phosphates: 0.06 - 1.60 mg/L PO₄³⁻-P

UVILINE

Reagents Kit Reference: 1MS352
 Preparation Time: ~ 12 min

NECESSARY REAGENTS

Phosphate 1 Reagent	1RP018
Phosphate 2 Reagent	1RP019

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
 Add 2 drops of Phosphate 1 Reagent.
 Homogenize.
 Add 2 drops of Phosphate 2 Reagent.
 Homogenize.
 Fill a measuring cell with this preparation.
 Wait 10 minutes.
 Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis
371 PO₄: 0.20 –5.00 mg/L
 or **391 PO₄-P : 0.06 –1.60 mg/L** (Result in mg/L of P)
 Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
 Press the key « zero ».
 Remove the blank cell and put the sample cell.
 Press the key «Start»

U-372 - Phosphates: 1.00- 40.0 mg/L PO₄³⁻
U-380 - Phosphates: 1.00- 36.00 mg/L P₂O₅
U-392 - Phosphates: 0.50 - 13.0 mg/L PO₄³⁻P

UVILINE

Reagents Kit Reference: 1MS352
 Preparation Time: ~ 12 min

NECESSARY REAGENTS

Phosphate 1 Reagent	1RP018
Phosphate 2 Reagent	1RP019

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
 Add 8 drops of Phosphate 1 Reagent.
 Homogenize.
 Add 8 drops of Phosphate 2 Reagent.
 Homogenize.
 Fill a measuring cell with this preparation.
 Wait 10 minutes.
 Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis
 372 PO₄ : 1.00 - 40.0 mg/L
 or **392 PO₄ -P : 0.50 - 13.0 mg/L** (Result in mg/L of P)
 or **380 P₂O₅ : 1.00- 36.0 mg/L** (Result in mg/L of P₂O₅)
 Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
 Press the key « zero ».
 Remove the blank cell and put the sample cell.
 Press the key «Start»

UVILINE

U-374 - Phosphates: 3.00 - 60 mg/L PO₄³⁻
U-394 - Phosphates: 1.00 - 20.0 mg/L PO₄³⁻-P

UVILINE

Reagents Kit Reference: 1MS351
 Preparation Time: ~ 6 min

NECESSARY REAGENTS

Vanadomolybdique Reagent 1RV000

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
 Add 16 drops of Vanadomolybdique Reagent.
 Homogenize
 Fill a measuring cell with this preparation.
 Wait 5 minutes.
 Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis
374 PO₄ : 3.00 - 60 mg/L
 or **394 PO₄ -P : 1.00 - 20.0 mg/L** (Result in mg/L of P)
 Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
 Press the key « zero ».
 Remove the blank cell and put the sample cell.
 Press the key «Start»

U-402 - Total Phosphate: 0,05 - 3 mg/L PO₄-P

Reagents kit reference: FTI2419019
Preparation time: ~ 40 min

UVILINE**REAGENTS**

Reaction Tubes
Blank Tube (red label)
Phosphate-101
Phosphate-102
Phosphate-103

RECOMMENDED EQUIPMENT (consult us)

Automatic Pipette 1 - 5 ml	1PA023
Pipette Tip 1 - 5 ml	1EU013
24 tubes stand Ø16	1PT013
Wooden clamp	1PT007
Heating reactor	1RD010
Universal cell holder + 16 mm tube holder for UVILINE	70VI0609

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 analyze.
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 careful, 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

In the concentration mode, select the analysis, **402 PO₄-P: 0,05 - 5mg/L**
Take the tube for the blank and insert it in the spectrophotometer.
Press the key « zero ».
Remove the tube and put the sample tube to analyze.
Press the key « start ».

To have the result as mg/L PO₄, multiply the result by 3,1

NOTES

If the analysis is performed without digestion only ortho-Phosphate ions are determined.

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

Reagents Kit Reference: 1MS340
Preparation Time: ~ 4min

UVILINE*NECESSARY REAGENTS*

Potassium Tablet 1AP189

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 1 Potassium Tablet, crush it and shake till it is totally dissolved.
Fill a measuring cell with this preparation.
Wait 3 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **410 K: 2.00- 15.0mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-420 - Silica: 10 - 300 mg/L SiO₂
U-421 - Silica: 0.20- 10 mg/L SiO₂

UVILINE

Reagents Kit Reference: 1MS341
Preparation Time: ~8min

NECESSARY REAGENTS

Ammonium Molybdate	1AM010
Sulfuric Acid ¼	1AS013
Oxalic Acid 10%	1AO000

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 20ml	14PG09
Pipette filler	1PD006
Erlenmeyer 50 ml with rubber stopper	1FE002

PREPARATION OF THE SAMPLE

Take 20 ml of water to analyze and put it in the erlenmeyer.
Add 1 spoonful to the brim of Ammonium Molybdate and shake to dissolve ~30 s
Add 7 drops of Sulfuric Acid ¼ and shake.
Wait 5 minutes.
Add 15 drops of Oxalic Acid 10% and shake.
Fill a measuring cell with this preparation.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis
420 SiO₂: 10 - 300mg/L
or **421 SiO₂: 0.20 - 10 mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-422 - Silica: 5 - 150 mg/L SiO₂

UVILINE

Reagents Kit Reference: 1MS342
Preparation Time: ~ 12 min

NECESSARY REAGENTS

Silica 1 Tablet	1AP290
Silica PR Tablet	1AP290
Silica 2 Tablet	1AP290

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 1 Silica 1 Tablet, crush it and shake till it is totally dissolved
Add 1 Silica 2 Tablet, crush it and shake till it is totally dissolved
Add 1 Silica PR Tablet, crush it and shake till it is totally dissolved
Fill a measuring cell with this preparation.
Wait 2 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **422 SiO₂ : 5 - 150mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-423 - Silica: 0.05 - 10 mg/L SiO₂**UVILINE**

Reagents Kit Reference: 1MS343

Preparation Time: ~ 12 min

NECESSARY REAGENTS

Silica 1 Tablet	1AP181
Silica PR Tablet	1AP181
Silica 2 Tablet	1AP181

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 1 Silica 1 Tablet, crush it and shake till it is totally dissolved
Add 1 Silica PR Tablet, crush it and shake till it is totally dissolved
Add 1 Silica 2 Tablet, crush it and shake till it is totally dissolved
Fill a measuring cell with this preparation.
Wait 2 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **423 SiO₂ : 0.05 - 10mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-430 - Sulfates: 5 - 300 mg/L SO_4^{2-}

Reagents Kit Reference: 1MS344
Preparation Time: ~ 11min

UVILINE

NECESSARY REAGENTS

Sulfates n°1 Reagent	1RS015
Sulfates n°2 Reagent	1RS016

NECESSARY EQUIPMENT (consult us)

Glass Tube	1CR099 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Universal cell holder + 16 mm tube holder for UVILINE	70VI0609

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in a glass tube
Add 5 drops of Sulfate n°1 Reagent, close the tube and shake vigorously 15 seconds.
Add 10 drops of Sulfate n°2 Reagent, close the tube and shake vigorously 15 seconds.
Wait 10 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **430 SO_4 :5 - 300mg/L**
Fill a glass tube with water to analyze without reagent (blank tube) and put it in the tube holder.
Press the key « zero ».
Remove the tube and put the sample tube in the tube holder.
Press the key «Start»

U-431-Sulfates: 10-200 mg/L SO₄²⁻

Reagents Kit Reference: 1MS041
Preparation Time: ~ 6min

UVILINE*NECESSARY REAGENTS*

Sulfate Tablet 1AP154

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 1 Sulfate Tablet, crush it and shake till it is totally dissolved
Fill a measuring cell with this preparation.
Wait 5 minutes.
Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **431 SO₄: 10 - 200mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

U-440 - Sulfides: 0.05 - 0.60 mg/L S**UVILINE**

Reagents Kit Reference: 1MS345

Preparation Time: ~ 6 min

NECESSARY REAGENTS

Sulfide Tablet n°1	1AP168
Sulfide Tablet n°2	1AP168

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 Sulfide n°1 Tablet and 1 Sulfide n°2 Tablet, crush them and shake till they are totally dissolved

Wait 5 minutes.

Fill a measuring cell with this preparation.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **440 S: 0.05- 0.60mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»

U-460 -Zinc: 0.05- 5.00 mg/l Zn

Reagents Kit Reference: 1MS356
Preparation Time: ~ 2min

UVILINE*NECESSARY REAGENTS*

Zinc 1 Reagent	1RZ011
Zinc 2 Reagent	1RZ012

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001

PREPARATION OF THE SAMPLE

Take 10 ml of water to analyze and put it in the erlenmeyer.
Add 5 drops of Zinc 1 Reagent
Homogenize
Wait 1 minute
Add 10 drops of Zinc 2 Reagent
Homogenize
Fill a measuring cell with this preparation.
Proceed to measurement

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **460 Zn: 0.05- 4.00mg/L**
Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.
Press the key « zero ».
Remove the blank cell and put the sample cell.
Press the key «Start»

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

UVILINE

Reagents Kit Reference: 1MS346

Preparation Time: ~ 6 min

NECESSARY REAGENTS

Zinc Tablet	1PZ001
Dechlor Tablet	1PZ001
EDTA Tablet	1PZ001

NECESSARY EQUIPMENT (consult us)

10 mm cell	0GG4Z0 *2
Graduated pipette 1/10 10ml	1PG003
Pipette filler	1PD006
Erlenmeyer 25 ml with rubber stopper	1FE001
Plastic crushing rod	1AP018

PREPARATION OF THE SAMPLE

Water not containing copper or chlorine

Take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 Zinc Tablet, crush it and shake till it is totally dissolved.

Wait 5 minutes.

Fill a measuring cell with this preparation.

Proceed to 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 $\text{Conc}(\text{Zn} + \text{Cu})$

Then take 10 ml of water to analyze and put it in the erlenmeyer.

Add 1 Zinc Tablet, crush it and shake till it is totally dissolved.

Wait 5 minutes.

Add 1 EDTA Tablet, crush it and shake till it is totally dissolved. (the color due to zinc disappears, the color due to copper remains).

Fill a measuring cell with this preparation.

Proceed to the measurement

The result is the concentration in copper $\text{Conc}(\text{Cu})$

Concentration in Zinc is :

$$\text{Conc}(\text{Zn}) = \text{Conc}(\text{Zn} + \text{Cu}) - \text{Conc}(\text{Cu})$$

Water containing chlorine

Take 10 ml of water to analyze and put it in the erlenmeyer.

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 measuring cell with this preparation.

Proceed to measurement.

MEASUREMENT OF THE BLANK AND THE SAMPLE

In the concentration mode, select the analysis **461 Zn: 0.10 - 4.00 mg/L**

Fill a cell with water to analyze without reagent (blank cell) and put it in the cell holder.

Press the key « zero ».

Remove the blank cell and put the sample cell.

Press the key «Start»