

Palintest

Water Analysis Technologies

Chlorine, Free

Photometric test for Free Chlorine in drinking water and pools and spas

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 5 mg/L Cl₂

TECHNICAL RESOURCE:

[Chlorine Test Method, Technical Information](#)

NOTES:

High levels of chlorine can cause bleaching and invalidate the result. If the colour becomes uneven or fades completely, check for bleaching by diluting the sample and repeating the test

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Pour out sample leaving a few drops.

04



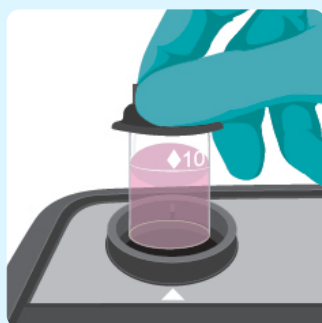
Add a DPD 1 tablet to those drops. Then, crush to form a paste.

05



Fill to the 10 mL line with further sample and stir.

06



Place the prepared sample in the cell holder and press Measure to obtain the concentration of Free Chlorine.

www.palintest.com

Palintest

Water Analysis Technologies

Chlorine, Total

Photometric test for Chlorine, Total (DPD 4) drinking water and pool or spas

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 5 mg/L Cl_2

TECHNICAL RESOURCE:

[Chlorine Test Method, Technical Information](#)

NOTES:

High levels of chlorine can cause bleaching and invalidate the result. If the colour becomes uneven or fades completely, check for bleaching by diluting the sample and repeating the test

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Pour out sample leaving a few drops.

04



Add a DPD 4 tablet to those drops. Then, crush to form a paste.

05



Fill to the 10 mL line with further sample and stir.

06



Place in the cell holder and press Measure.

07



Allow timer to count down 2 minutes. The concentration of Total Chlorine will then be displayed.

www.palintest.com

Palintest

Water Analysis Technologies

pH-Phenol Red

Photometric test for pH in water at room temperature (20°C to 25°C) using Phenol Red

COLOUR CHANGE

Yellow to Red

RANGE:

6.5 - 8.4 pH units

TECHNICAL RESOURCE:

[pH-Phenol Red Test Method, Technical Information](#)

NOTES:

High levels of chlorine or other disinfectants will cause an intense purple coloration. This will mean the result is not valid
Ionic strength, temperature and other water factors may have an effect on pH readings. This test has been calibrated for drinking and natural waters in the range 20°C to 25°C

01



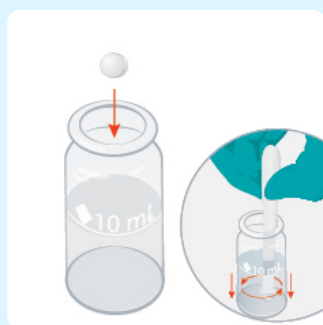
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Phenol Red tablet and crush and stir.

04



Place the tube in the cell holder and press Measure to obtain the pH value.

Palintest

Water Analysis Technologies

Turbidity

Photometric test for Turbidity in natural and treated water

COLOUR CHANGE

Clear to Cloudy

RANGE:

0 - 1000 FTU

TECHNICAL RESOURCE:

Turbidity Test Method, Technical Information

NOTES:

For lower level turbidity and nephelometric measurement in accordance with ISO 7027, use a Palintest Turbimeter Plus instrument

01



Filter 10 mL of sample through a GF/B filter .

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Fill a second tube to the 10mL line with unfiltered sample.

04



Place in cell holder and press Measure to obtain value for Turbidity. Please note: This not a nephelometric measurement.

Palintest

Water Analysis Technologies

Colour

Photometric test for the Colour produced by natural organic materials in water

COLOUR CHANGE

Colourless to Yellow to Brown

RANGE:

0 - 500 mg/L Pt Co

TECHNICAL RESOURCE:

Colour Test Method, Technical Information

NOTES:

This test is only for colour in water from naturally occurring organic material. The presence of metallic impurities, dyestuffs, or industrial pollutants will invalidate the result.

01



Fill to the 10 mL line with deionised water.

02



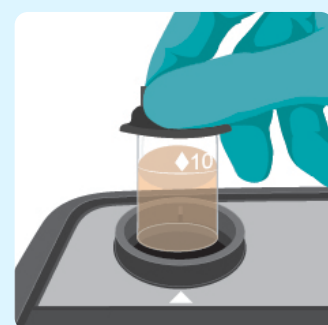
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Filter 10 mL of sample through a GF/B filter .

04



Place in cell holder and press Measure to obtain value for Colour on Pt/Co Scale.

Palintest

Water Analysis Technologies

Fluoride

Photometric test for Fluoride in drinking water, natural water and treated water

COLOUR CHANGE

Red to Yellow

RANGE:

0 - 15 mg/L F

TECHNICAL RESOURCE:

Fluoride Test Method, Technical Information

01



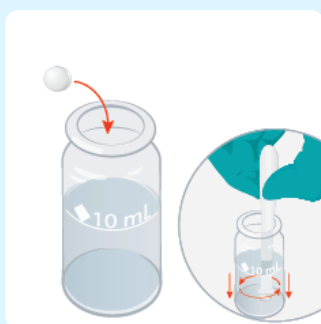
Fill to the 10 mL line with sample.

02



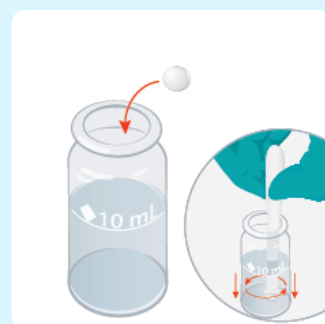
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Fluoride No1 tablet and crush and stir.

04



Then, add a Fluoride No2 tablet and crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 5 minutes. The concentration of Fluoride will then be displayed.

Palintest

Water Analysis Technologies

Nitrate LR

Photometric test for Nitrate (low range) in natural, drinking and waste water

COLOUR CHANGE

Colourless to Red

RANGE:

0 - 1 mg/L N

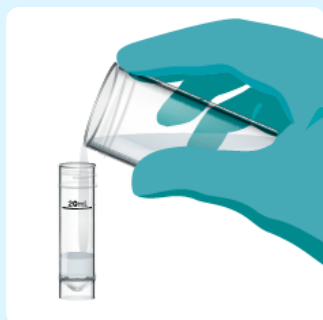
TECHNICAL RESOURCE:

Nitrate Test Method, Technical Information

NOTES:

The test will also respond to nitrite but in normal situations nitrite levels will be very low compared to nitrate. To correct any effect a nitrite test can be carried out and the result as N subtracted from the nitrate result as N

01



Fill a nitrate test tube to the 20 mL line with sample.

02



Add a level spoonful of Nitrate Powder.

03



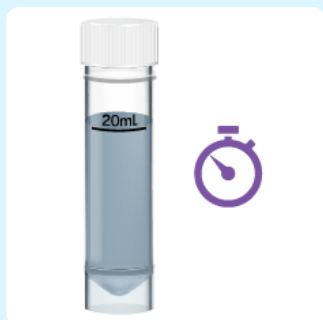
Add a Nitrate test Tablet. But, do not crush.

04



Replace screw cap and shake well for 1 minute.

05



Allow tube to stand for 1 minute.

06



Gently invert tube, three times.

07



Stand tube for 3 minutes or until complete settlement.

08



Remove cap and wipe rim to remove all traces of Nitrate powder.

Test continued on page 2



Nitrate LR

Photometric test for Nitrate (low range) in natural, drinking and waste water

COLOUR CHANGE

Colourless to Red

RANGE:

0 - 1 mg/L N

TECHNICAL RESOURCE:

[Nitrate Test Method, Technical Information](#)

NOTES:

The test will also respond to nitrite but in normal situations nitrite levels will be very low compared to nitrate. To correct any effect a nitrite test can be carried out and the result as N subtracted from the nitrate result as N

09



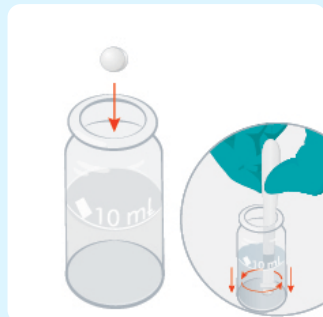
Carefully decant 10 mL of clear liquid in to a photometer tube.

10



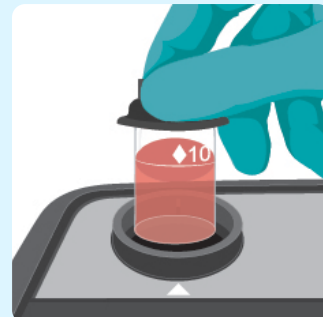
Use this to "blank" the instrument. Place in cell holder and press Blank.

11



Then, add a Nitricol tablet and crush and stir.

12



Place in the cell holder and press Measure.

13



Allow timer to count down 10 minutes. Concentration of Nitrate will then be displayed.

Palintest

Water Analysis Technologies

Nitrate MR

Photometric test for Nitrate (medium range) in natural, drinking and waste water

COLOUR CHANGE

Colourless to Red

RANGE:

0 - 20 mg/L N

TECHNICAL RESOURCE:

[Nitrate Test Method, Technical Information](#)

NOTES:

The test will also respond to nitrite but in normal situations nitrite levels will be very low compared to nitrate. To correct any effect a nitrite test can be carried out and the result as N subtracted from the nitrate result as N

01



Add 1 mL of sample to a Nitratetest tube.

02



Fill to the 20 mL line with deionised water.

03



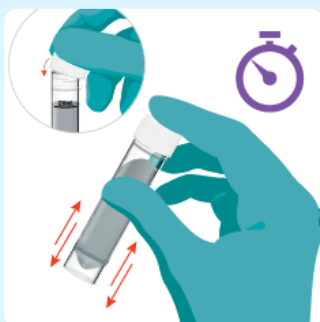
Add a level spoonful of Nitratetest Powder.

04



Add a Nitratetest Tablet. But, do not crush.

05



Replace screw cap and shake well for 1 minute.

06



Allow tube to stand for 1 minute.

07



Gently invert tube, three times.

08



Stand tube for 3 minutes or until complete settlement.

Test continued on page 2



Nitrate MR

Photometric test for Nitrate (medium range) in natural, drinking and waste water

COLOUR CHANGE

Colourless to Red

RANGE:

0 - 20 mg/L N

TECHNICAL RESOURCE:

[Nitrate Test Method, Technical Information](#)

NOTES:

The test will also respond to nitrite but in normal situations nitrite levels will be very low compared to nitrate. To correct any effect a nitrite test can be carried out and the result as N subtracted from the nitrate result as N

09



Remove cap and wipe rim to remove all traces of Nitratetest powder.

10



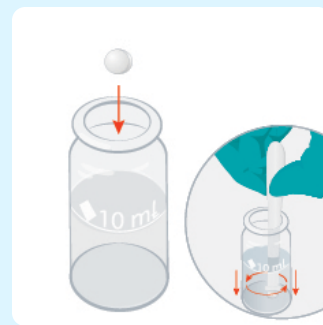
Carefully decant 10 mL of clear liquid in to a photometer tube.

11



Use this to "blank" the instrument. Place in cell holder and press Blank.

12



Then, add a Nitricol tablet and crush and stir.

13



Place in the cell holder and press Measure.

14



Allow timer to count down 10 minutes. Concentration of Nitrate will then be displayed.

Palintest

Water Analysis Technologies

Nitrite LR

Photometric test for Nitrite (low range) in natural, drinking and wastewater

COLOUR CHANGE

Colourless to Red

RANGE:

0 - 0.5 mg/L N

TECHNICAL RESOURCE:

Nitrite (Nitricol) Test Method, Technical Information

01



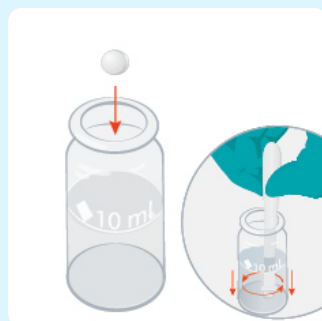
Fill to the 10 mL line with sample.

02



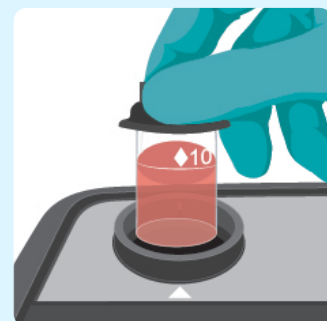
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Then, add a Nitricol tablet and crush and stir.

04



Place in the cell holder and press Measure.

05



Allow timer to count down 10 minutes. The concentration of Nitrite will then be displayed.

Palintest

Water Analysis Technologies

Ammonia/1N Tablet

Photometric test for Ammonia in groundwater, drinking water, seawater, and wastewater

COLOUR CHANGE

Colourless to Yellow to Green

RANGE:

0 - 1 mg/L N

TECHNICAL RESOURCE:

Ammonia 1N Indophenol Test Method, Technical Information

NOTES:

Brackish samples may only require a single spoonful of conditioning reagent to prevent turbidity forming
Low temperatures will slow the rate of colour development. Therefore, if the sample temperature is below 20°C, allow 15 minutes for the colour to develop

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



For seawater samples only, add two spoonfuls of Ammonia Conditioning reagent and mix well. Otherwise skip this step.

04



Prepare sample by adding an Ammonia No1 tablet and an Ammonia No2 tablet. Crush both tablets and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 10 minutes. The concentration of Ammonia will then be displayed. Note: Check full test instructions if sample is below 20°C.

Palintest

Water Analysis Technologies

Iron LR

Photometric test for Iron (low range) in natural, process, treated and drinking water

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 1 mg/L Fe

TECHNICAL RESOURCE:

[Iron LR Test Method, Technical Information](#)

NOTES:

Colour development is normally complete within 1 minute. If colour development continues after that time, it is likely that iron complexes are present. Wait further time for colour to stabilize, allowing up to 15 minutes

01



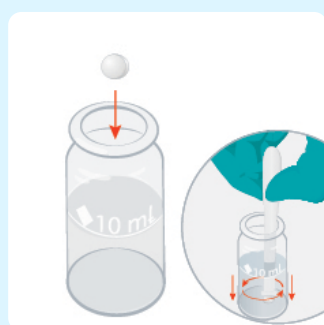
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Then, prepare sample by adding an Iron LR tablet and crush and stir.

04



Place in the cell holder and press Measure.

05



Allow timer to count down 1 minute. The concentration of Iron will then be displayed.

Palintest

Water Analysis Technologies

Iron MR

Photometric test for Iron (medium range) in natural, treated and drinking water

COLOUR CHANGE

Colourless to Orange

RANGE:

0 - 5 mg/L Fe

TECHNICAL RESOURCE:

Iron MR Test Method, Technical Information

01



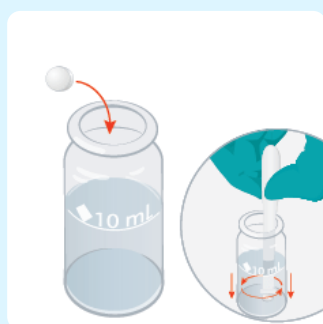
Fill to the 10 mL line with sample.

02



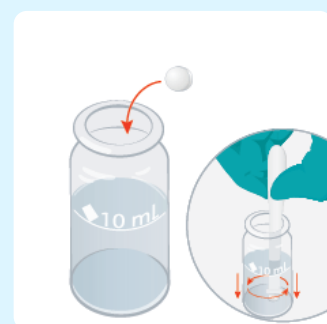
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding an Iron MR No1 tablet and crush and stir.

04



Then, add an Iron MR No2 tablet and crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 10 minutes. The concentration of Iron will then be displayed.

Palintest

Water Analysis Technologies

Manganese LR

Photometric test for Manganese (low range) in natural water

COLOUR CHANGE

Colourless to Turquoise

RANGE:

0 - 0.03 mg/L Mn

TECHNICAL RESOURCE:

Manganese LR Test Method, Technical Information

NOTES:

Because manganese is adsorbed on to surfaces of sample containers. Test as soon as possible after collection
Ensure that all glassware is scrupulously clean. Acid rinsing is highly recommended

01



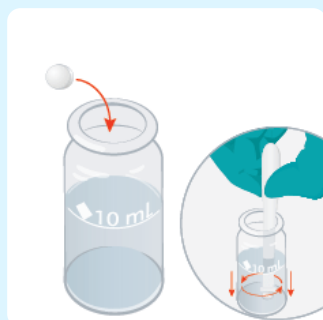
Fill to the 10 mL line with sample.

02



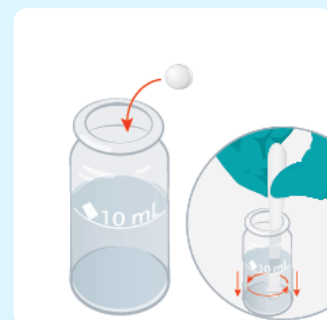
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Manganese No1 tablet and crush and stir. Note: Sample temperature needs to be between 19°C and 21°C.

04



Then, add a Manganese No2 tablet and crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 20 minutes. The concentration of Manganese will then be displayed.

Palintest

Water Analysis Technologies

Aluminium

Photometric test for Aluminium in treated and natural water

COLOUR CHANGE

Colourless to Pink to Red

RANGE:

0 - 0.5 mg/L Al

TECHNICAL RESOURCE:

Aluminium Test Method, Technical Information

NOTES:

Ensure that all glassware is scrupulously clean. Acid rinsing is highly recommended.

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



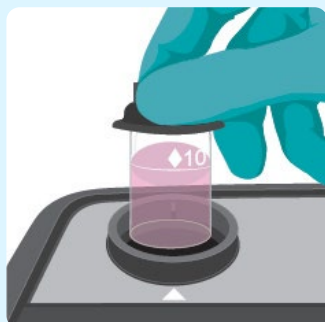
Prepare sample by adding an Aluminium No1 tablet and crush and stir.

04



Then, add an Aluminium No2 tablet. Vigorously crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 5 minutes. The concentration of Aluminium will then be displayed.

www.palintest.com

Palintest

Water Analysis Technologies

Hardness, Total

Photometric test for Total Hardness in natural water, treated water and drinking water

COLOUR CHANGE

Colourless to Purple

RANGE:

0 - 500 mg/L CaCO₃

TECHNICAL RESOURCE:

Total Hardness Test Method, Technical Information

NOTES:

Strongly acidic or alkaline samples should be adjusted to within pH 4 to pH 10 prior to starting the test

01



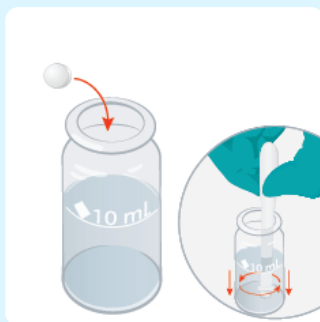
Fill to the 10 mL line with sample.

02



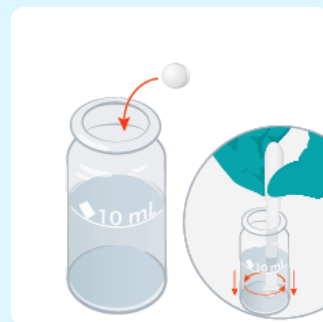
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



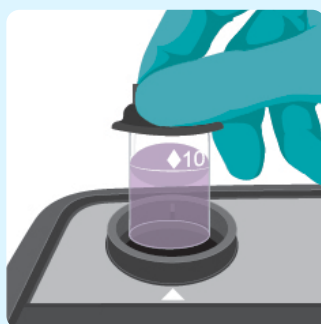
Prepare sample by adding a Hardicol No1 tablet and crush and stir.

04



Then, add a Hardicol No2 tablet. Thoroughly crush and stir, until fully dissolved.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 2 minutes. The result for Total Hardness will be displayed.

Palintest

Water Analysis Technologies

Calcium Hardness

Photometric test for Calcium Hardness in pool, spa, treated and natural water

COLOUR CHANGE

Violet to Orange

RANGE:

0 - 500 mg/L CaCO_3

TECHNICAL RESOURCE:

[Calcium Hardness Test Method, Technical Information](#)

NOTES:

Strongly acidic or alkaline samples should be adjusted to within pH 4 to pH 10 prior to starting the test

01



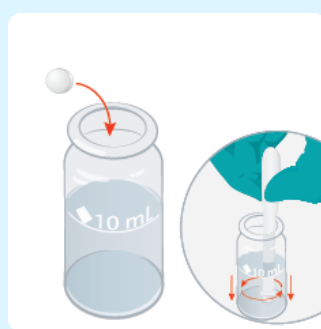
Fill to the 10 mL line with sample.

02



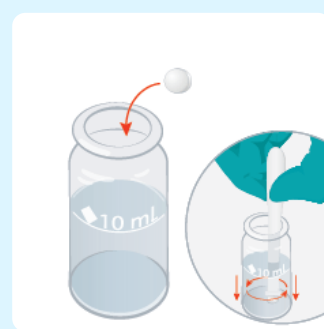
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Calcicol No1 tablet. Crush and stir.

04



Then, add a Calcicol No2 tablet. Crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 2 minutes. The concentration of Calcium will then be displayed.

www.palintest.com

Palintest

Water Analysis Technologies

Alkalinity, Total

Photometric test for Total Alkalinity in pool, spa, treated and natural water

COLOUR CHANGE

Yellow through Green to Blue

RANGE:

0 - 500 mg/L CaCO₃

TECHNICAL RESOURCE:

Alkalinity Test Method, Technical Information

01



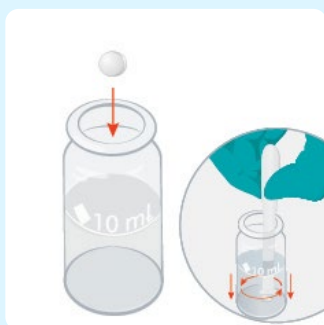
Fill to the 10 mL line with sample.

02



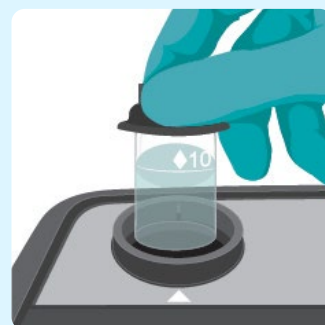
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding an Alkalinity tablet. Thoroughly crush and stir, until fully dissolved.

04



Place in the cell holder and press Measure.

05



Allow timer to count down 1 minute. The concentration of Total Alkalinity will then be displayed.

Palintest

Water Analysis Technologies

Sulfate

Photometric test for Sulfate natural, treated and swimming pool water

COLOUR CHANGE

Clear to Cloudy

RANGE:

0 - 200 mg/L SO₄

TECHNICAL RESOURCE:

[Sulfate Test Method, Technical Information](#)

NOTES:

Sulfate tablets contain barium chloride which is extremely harmful if ingested. Avoid handling tablets and wash hands after use

01



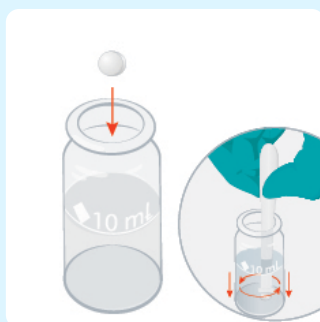
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Sulfate Turb tablet and crush and stir.

04



Wait 1 minute. Then, stir again.

05



Place in the cell holder and press Measure to display the concentration of Sulfate.

Palintest

Water Analysis Technologies

Phosphate LR

Photometric test for Phosphate (low range) in natural and drinking water

COLOUR CHANGE

Colourless to Blue

RANGE:

0 - 4 mg/L PO₄

TECHNICAL RESOURCE:

Phosphate LR Test Method, Technical Information

01



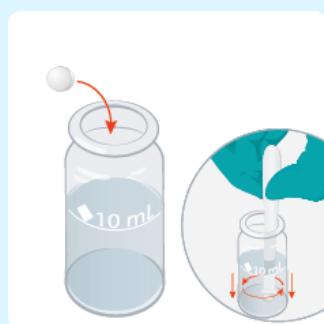
Fill to the 10 mL line with sample.

02



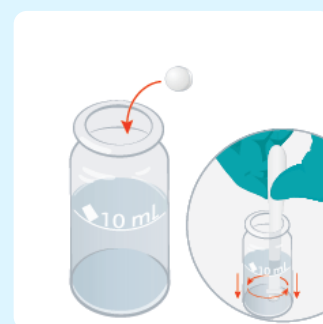
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Phosphate LR No1 tablet and crush and stir.

04



Then, add a Phosphate LR No2 Tablet and crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 10 minutes. The concentration of Phosphate will then be displayed.

Palintest

Water Analysis Technologies

Chloride LR

Photometric test for Chloride (low range) in freshwater, drinking water and treated (softened) water

COLOUR CHANGE

Clear to Cloudy

RANGE:

0 - 50 mg/L Cl

TECHNICAL RESOURCE:

Chloride & Salt (Chloridol) Test Method, Technical Information

01



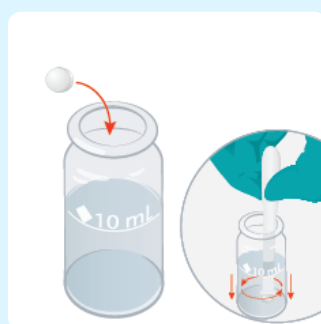
Fill to the 10 mL line with sample.

02



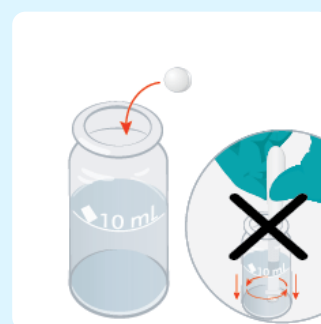
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding an Acidifying CD tablet and crush and stir.

04



Then, add a Chloridol tablet. But, do not crush.

05



Allow 2 minutes for tablet to disintegrate.

06



Crush any remaining particles and stir.

07



Place in cell holder and press Measure to obtain concentration of Chloride.

Palintest

Water Analysis Technologies

Copper, Free

Photometric test for Free Copper in ground water and treated water

COLOUR CHANGE

Colourless to Purple

RANGE:

0 - 5 mg/L Cu

TECHNICAL RESOURCE:

Copper (Coppercol) Test Method, Technical Information

01



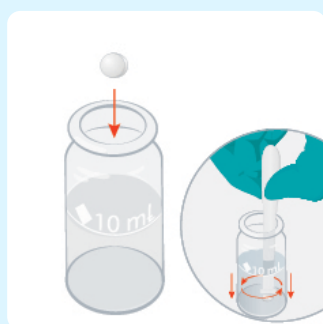
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Coppercol No1 tablet and crush and stir.

04



Place the tube in the cell holder and press Measure to obtain the concentration of Free Copper.

Palintest

Water Analysis Technologies

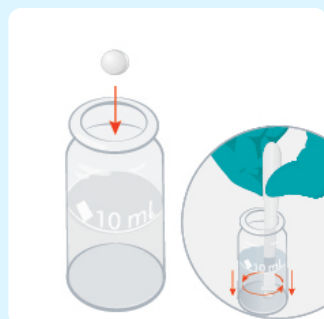
Zinc	
Photometric test for Zinc in natural and treated water	
COLOUR CHANGE	Orange to Purple to Blue
RANGE:	0 - 2 mg/L Zn
TECHNICAL RESOURCE:	Zinc Test Method, Technical Information

01



Fill to the 10 mL line with sample.

02



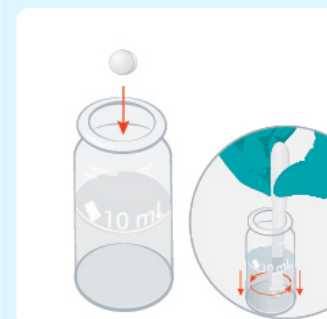
If chlorine is present, add a Zinc-Dechlor tablet and crush and stir. Otherwise, skip this step.

03



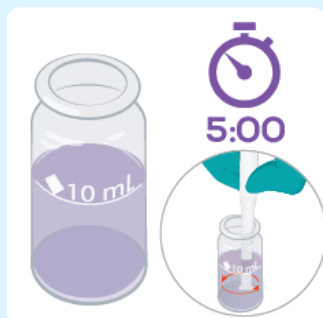
Use this to "blank" the instrument. Place in cell holder and press Blank.

04



Then, add a Zinc tablet and crush and stir.

05



Wait 5 minutes. Then, stir again.

06



Place the tube in the cell holder and press Measure to obtain the concentration of Zinc.

Palintest

Water Analysis Technologies

Acid Demand

Photometric test for Acid Demand/Acid Capacity in swimming pool water

COLOUR CHANGE

Yellow through Green to Blue

RANGE:

0 - 9 mmol/L

TECHNICAL RESOURCE:

Acid Demand Test Method, Technical Information

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding an Alkaphot tablet. Thoroughly crush and stir, until fully dissolved.

04



Place in the cell holder and press Measure.

05



Allow timer to count down 1 minute. The Acid Demand result will then be displayed.

Palintest

Water Analysis Technologies

Alkalinity P

Photometric test for Alkalinity P in treated water

COLOUR CHANGE

Colourless to Purple

RANGE:

0 - 500 mg/L CaCO₃

TECHNICAL RESOURCE:

Alkalinity M and P Test Method, Technical Information

01



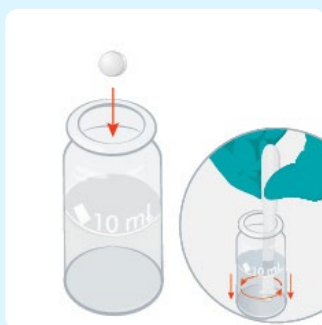
Fill to the 10 mL line with sample.

02



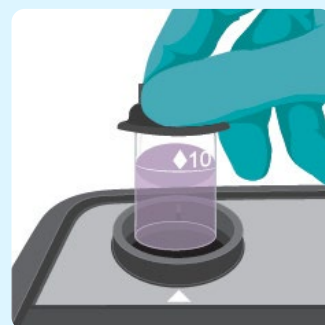
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding an Alkaphot P tablet and crush and stir.

04



Place in the cell holder and press Measure.

05



Allow timer to count down 2 minutes. Alkalinity P will then be measured and displayed.

Palintest

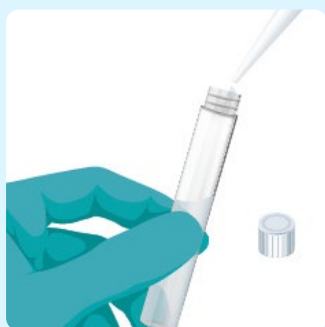
Water Analysis Technologies

Ammonia/100N Nessler

Photometric test for Ammonia in freshwater, seawater, and wastewater

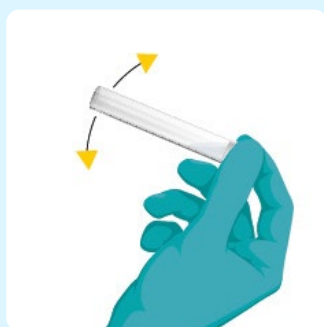
COLOUR CHANGE	Colourless to Yellow to orange
RANGE:	0 - 100 mg/L N
TECHNICAL RESOURCE:	Ammonia Nessler Test Method, Technical Information
NOTES:	Nessler's reagent is sensitive to air, replace cap promptly

01



Add 0.5 mL of sample to a Tubetest.

02



Invert tube a few times to mix.

03



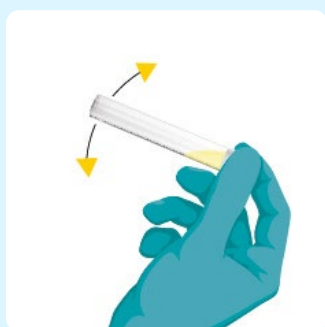
Use this to "blank" the instrument. Fit the Tubetest adapter to Lumiso, insert tube and press Blank.

04



Add 12 drops of Nessler's reagent.

05



Invert tube a few times to mix.

06



Without delay, place tube in cell holder and press Measure.

07



Allow timer to count down 1 minute. The concentration of Ammonia will then be displayed.

www.palintest.com

Palintest

Water Analysis Technologies

Ammonia/12N Indophenol

Photometric test for Ammonia in freshwater, seawater, and wastewater

COLOUR CHANGE

Colourless to Yellow to Green

RANGE:

0 - 12 mg/L N

TECHNICAL RESOURCE:

Ammonia 12N 50N Test Method, Technical Information

NOTES:

Ensure that tubetests and sample are between 18°C and 22°C

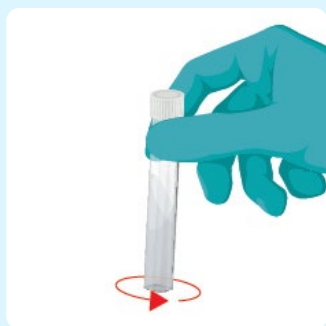
The 10 minute colour development time is critical, further colour change after that time should be ignored

01



Add 1 mL of sample to a Tubetest.

02



Swirl to mix.

03



Use this to "blank" the instrument. Fit the Tubetest adapter to Lumiso, insert tube and press Blank.

04



Remove tube and add a Tubetest Ammonia (Indophenol) tablet. Gently crush tablet and stir.

05



Without delay, place tube in cell holder and press Measure.

06



Allow timer to count down 10:00 minutes.

07



When timer warning sounds, remove tube and invert once.

08



Replace tube back in cell holder and press Measure to display the Ammonia concentration.

Palintest

Water Analysis Technologies

Ammonia/15N Nessler

Photometric test for Ammonia in freshwater, seawater, and wastewater

COLOUR CHANGE	Colourless to Yellow to orange
RANGE:	0 - 15 mg/L N
TECHNICAL RESOURCE:	Ammonia Nessler Test Method, Technical Information
NOTES:	Nessler's reagent is sensitive to air, replace cap promptly

01



Add 5 mL of sample to a Tubetest.

02



Invert tube a few times to mix.

03



Use this to "blank" the instrument. Fit the Tubetest adapter to Lumiso, insert tube and press Blank.

04



Add 12 drops of Nessler's reagent.

05



Invert tube a few times to mix.

06



Without delay, place tube in cell holder and press Measure.

07



Allow timer to count down 1 minute. The concentration of Ammonia will then be displayed.

Palintest

Water Analysis Technologies

Ammonia/50N Indophenol

Photometric test for Ammonia in freshwater, seawater, and wastewater

COLOUR CHANGE

Colourless to Yellow to Green

RANGE:

0 - 50 mg/L N

TECHNICAL RESOURCE:

Ammonia 12N 50N Test Method, Technical Information

NOTES:

Ensure that tubetests and sample are between 18°C and 22°C

The 10 minute colour development time is critical, further colour change after that time should be ignored

01



Add 0.2 mL of sample to a Tubetest.

02



Swirl to mix.

03



Use this to "blank" the instrument. Fit the Tubetest adapter to Lumiso, insert tube and press Blank.

04



Remove tube and add a Tubetest Ammonia (Indophenol) tablet. Gently crush tablet and stir.

05



Without delay, place tube in cell holder and press Measure.

06



Allow timer to count down 10:00 minutes.

07



When timer warning sounds, remove tube and invert once.

08



Replace tube back in cell holder and press Measure to display the Ammonia concentration.

Palintest

Water Analysis Technologies

Ammonia/50N Nessler

Photometric test for Ammonia in freshwater, seawater, and wastewater

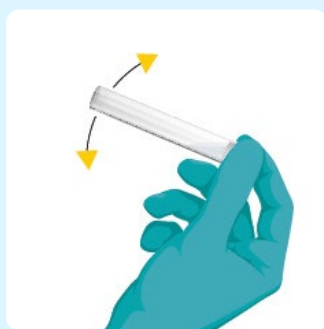
COLOUR CHANGE	Colourless to Yellow to orange
RANGE:	0 - 50 mg/L N
TECHNICAL RESOURCE:	Ammonia Nessler Test Method, Technical Information
NOTES:	Nessler's reagent is sensitive to air, replace cap promptly

01



Add 1 mL of sample to a Tubetest.

02



Invert tube a few times to mix.

03



Use this to "blank" the instrument. Fit the Tubetest adapter to Lumiso, insert tube and press Blank.

04



Add 12 drops of Nessler's reagent.

05



Invert tube a few times to mix.

06



Without delay, place tube in cell holder and press Measure.

07



Allow timer to count down 1 minute. The concentration of Ammonia will then be displayed.

Palintest

Water Analysis Technologies

Cal Hardness (Salt Pool)

Photometric test for Calcium Hardness in swimming pools with salt based chlorine generators

COLOUR CHANGE

Violet to Orange

RANGE:

0 - 500 mg/L CaCO_3

TECHNICAL RESOURCE:

[Calcium Hardness Test Method, Technical Information](#)

NOTES:

Strongly acidic or alkaline samples should be adjusted to within pH 4 to pH 10 prior to starting the test

01



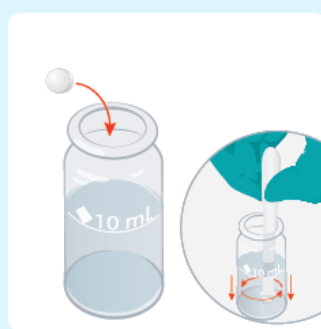
Fill to the 10 mL line with sample.

02



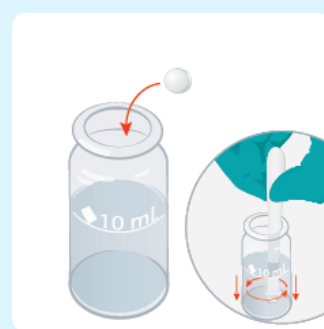
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Calcicol No1 tablet. Crush and stir.

04



Then, add a Calcicol No2 tablet. Crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 2 minutes. The concentration of Calcium will then be displayed.

www.palintest.com

Palintest

Water Analysis Technologies

Copper, Chelated

Photometric test for Free, Total and Chelated Copper in natural and treated water

COLOUR CHANGE

Colourless to Purple

RANGE:

0 - 5 mg/L Cu

TECHNICAL RESOURCE:

Copper (Coppercol) Test Method, Technical Information

01



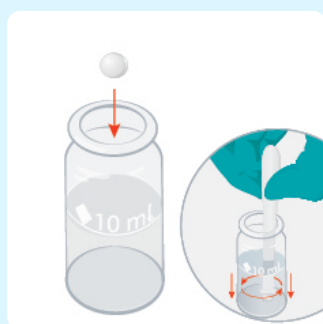
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



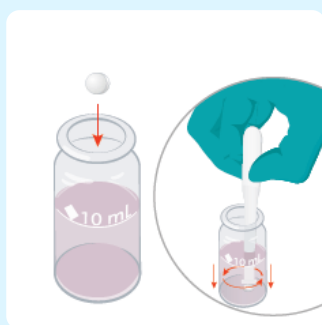
Prepare sample by adding a Coppercol No1 tablet and crush and stir.

04



Place the prepared sample in the cell holder and press Measure to obtain the concentration of Free Copper. Then press Continue.

05



To the same sample, add a Coppercol No2 tablet and crush and stir.

06



Place back in cell holder and press Measure. Total Copper concentration will be displayed. Press Finish, to scroll through Free, Total and Chelated Copper.

www.palintest.com

Palintest

Water Analysis Technologies

Chloride HR

Photometric test for Chloride (high range) in freshwater, drinking water, swimming pools and treated water

COLOUR CHANGE

Clear to Cloudy

RANGE:

0 - 500 mg/L Cl

TECHNICAL RESOURCE:

Chloride & Salt (Chloridol) Test Method, Technical Information

01



Add 1 mL of sample to a photometer tube.

02



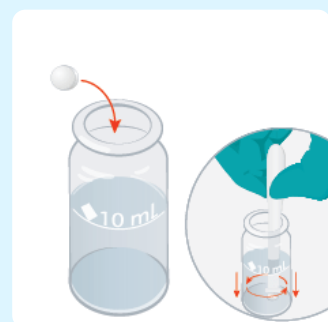
Fill to the 10 mL line with deionised water.

03



Use this to "blank" the instrument. Place in cell holder and press Blank.

04



Prepare sample by adding an Acidifying CD tablet and crush and stir.

05



Then, add a Chloridol tablet. But, do not crush.

06



Allow 2 minutes for tablet to disintegrate.

07



Crush any remaining particles and stir.

08



Place in cell holder and press Measure to obtain concentration of Chloride.

Palintest

Water Analysis Technologies

Chlorine and Chloramines

Photometric test for Chlorine and Chloramines in Drinking Water

COLOUR CHANGE

Colourless to Pink

RANGE:

0 – 5 mg/L Cl_2

TECHNICAL RESOURCE:

[Chlorine and Chloramines Test Method, Technical Information](#)

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Pour out sample leaving a few drops.

04



Add a DPD 1 tablet to those drops. Then, crush to form a paste.

05



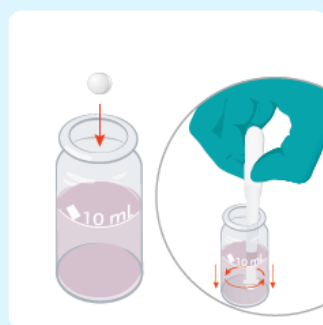
Fill to the 10 mL line with sample.

06



Place the tube in the cell holder and press Measure to obtain the concentration of Free Chlorine. Then, press Continue.

07



Continue, using the same sample. Add a DPD 2 tablet and crush and stir.

08



Place the tube in the cell holder and press Measure to obtain the Monochloramine concentration. Then, press Continue.

Test continued on page 2



Chlorine and Chloramines

Photometric test for Chlorine and Chloramines in Drinking Water

COLOUR CHANGE

Colourless to Pink

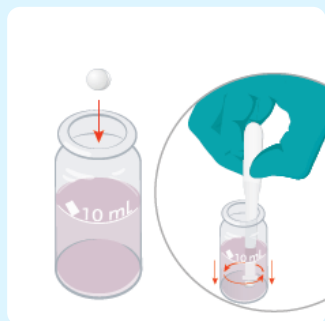
RANGE:

0 - 5 mg/L Cl_2

TECHNICAL RESOURCE:

[Chlorine and Chloramines Test Method, Technical Information](#)

09



Continue, using the same sample. Add a DPD 3 tablet and crush and stir.

10



Place in the cell holder and press Measure.

11



Allow timer to count down 2 minutes. The concentration of Dichloramine will then be displayed. Press Finish to scroll through all the results in this test.

Palintest

Water Analysis Technologies

Chlorine Dioxide

Photometric test for Chlorine Dioxide in drinking water

COLOUR CHANGE

Colourless to Pink

RANGE:

0 – 10 mg/L ClO_2

TECHNICAL RESOURCE:

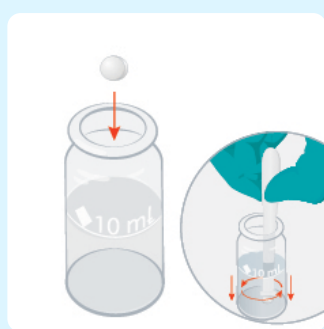
[Chlorine Dioxide Test Method, Technical Information](#)

01



Gently add 10 mL of sample to a photometer tube.

02



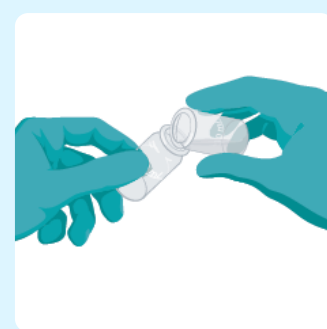
Add a Glycine tablet. Then, very gently, crush and stir.

03



Use this to "blank" the instrument. Place in cell holder and press Blank.

04



Gently pour a few drops of this into a second tube.

05



Add a DPD 1 tablet to those drops. Then, crush to form a paste.

06



Gently pour the remaining sample into this tube.

07



Place in the cell holder and press Measure to obtain the concentration of Chlorine Dioxide.

Palintest

Water Analysis Technologies

Chlorine HR

Photometric test for Chlorine HR for disinfection applications

COLOUR CHANGE

Colourless to Yellow to Brown

RANGE:

0 - 250 mg/L Cl_2

TECHNICAL RESOURCE:

[Chlorine HR Test Method, Technical Information](#)

01



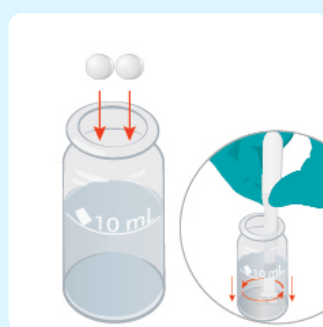
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding an Acidifying GP tablet and a Chlorine HR tablet. Then, crush both tablets and stir.

04



Place the tube in the cell holder and press Measure to obtain the concentration of Total Chlorine.

Palintest

Water Analysis Technologies

Chromium (VI)

Photometric test for Hexavalent Chromium in effluents and wastewater

COLOUR CHANGE

Colourless to Purple

RANGE:

0 - 1 mg/L Cr

TECHNICAL RESOURCE:

[Chromium Test Method, Technical Information](#)

NOTES:

Iron above 1 mg/L will cause low results, in which case use two Chromicol No1 tablets with a single Chromicol No2 to increase tolerance to iron

01



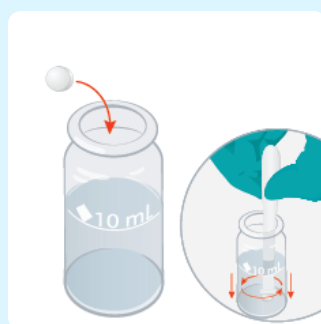
Fill to the 10 mL line with sample.

02



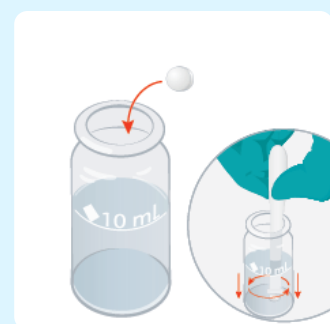
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



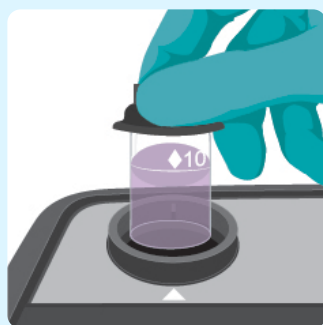
Prepare sample by adding a Chromicol No1 tablet and crush and stir.

04



Then, add a Chromicol No2 tablet and crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 10 minutes. The concentration of Chromium (VI) will then be displayed.

Palintest

Water Analysis Technologies

CODMn

Photometric test for COD Mn in natural water

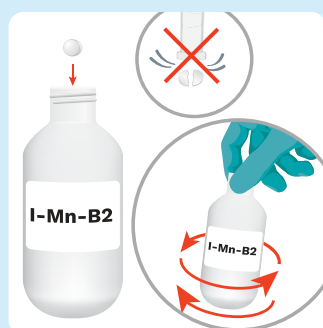
COLOUR CHANGE

Dark Yellow to Clear Yellow.

RANGE:

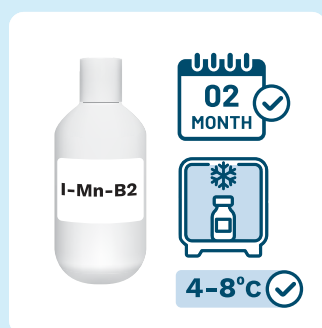
The test range is 0-10 mg/L

01



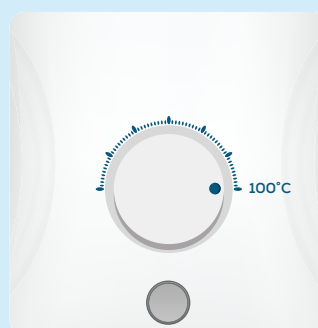
Add one I-Mn-B1 reagent tablet to the solution in the plastic bottle labeled I-Mn-B2. Shake the solution until all particles are dissolved.

02



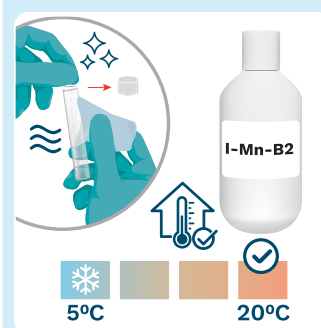
Care point: The I-Mn-B solution is stable for 2 months if stored in a refrigerator at 4-8°C.

03



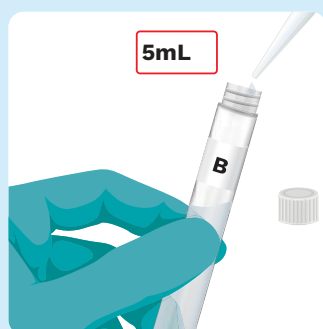
Set water bath to 100°C and allow it to reach temperature

04



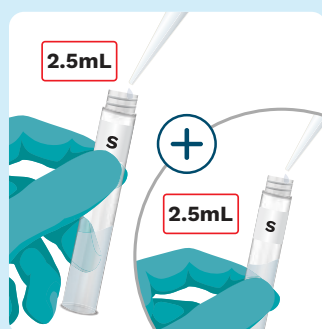
Care point: Make sure that the test tubes and test tube covers have been cleaned and dried, and let the I-Mn-B solution return to room temperature before use

05



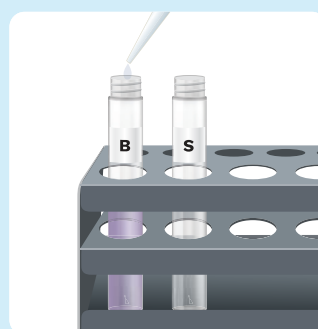
Reagent Blank preparation: Add 5mL of deionized water into a Tubetest

06



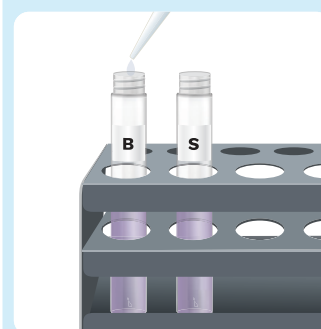
Sample preparation: add 2.5mL of sample and 2.5mL of deionized/ distilled water to a Tubetest.

07



Add 250 µL of I-Mn-A reagent into each tubetest.

08



Add 250 µL of I-Mn-B reagent into each Tubetest.

Test continued on page 2



CODMn

Photometric test for COD Mn in natural water

COLOUR CHANGE

Dark Yellow to Clear Yellow.

RANGE:

The test range is 0-10 mg/L

09



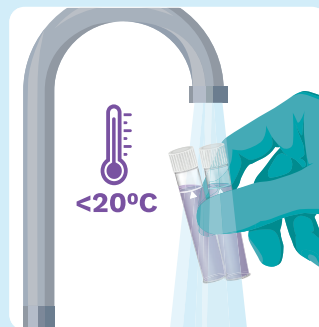
Invert tubes a few times to mix

10



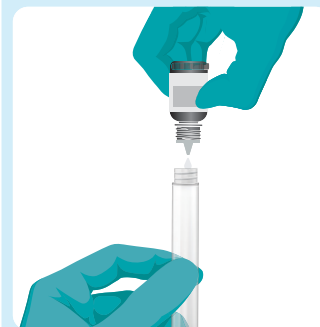
Place the tubes in a water bath and leave for exactly 30 minutes at 100°C.

11



After digestion, quickly cool the digestion tubes to room temperature (20-25°C) with cold water (tap water <20°C);

12



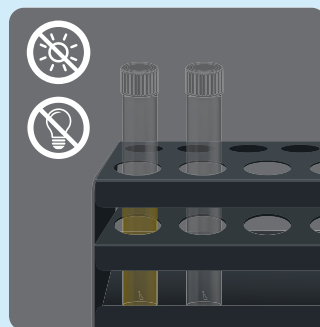
Add 2 drops of I-Mn-C reagent to each of the Tubetests

13



Invert tubes a few times to mix

14



Place the tubes in a dark place to react for 3 minutes

15



Fit the Tubetest adapter to Lumiso, then, insert blank and press Blank. Note: Retain blank for future use.

16



Place the sample Tubetest in the adapter and press Measure to display the Permanganate index concentration.

Palintest

Water Analysis Technologies

COD/1000

Photometric test for Chemical Oxygen Demand in effluents and wastewater

COLOUR CHANGE

Orange to Green

RANGE:

0 - 1000 mg/L O₂

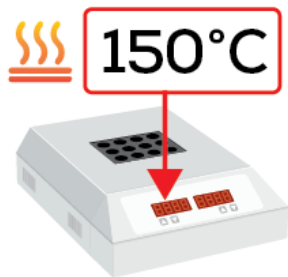
TECHNICAL RESOURCE:

Chemical Oxygen Demand Test Method, Technical Information

NOTES:

High chloride levels will lead to inaccurately high results. See Test Method Technical Information for details. Switching to "M" or "2M" COD Tubetests will increase the suppression of this interference and/or the sample can be diluted prior to the test to reduce the chloride concentration

01



Turn on heater block and set temperature to 150°C. Note: Timer may need setting above zero for warm up to start.

02



Take an unused Tubetest and shake to suspend the sediment.

03



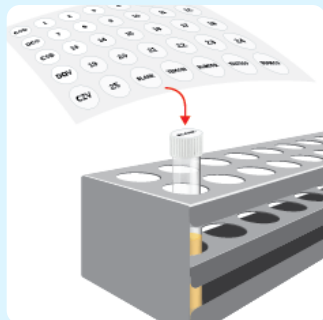
Then, add 2 mL of deionised water.

04



Replace cap tightly and invert to mix. Warning: Liquid will become hot.

05



Place in a rack and label the tube as the "Blank".

06



Take a new, unused, Tubetest and shake to suspend the sediment.

07



Then, add 2 mL of sample.

08



Replace cap tightly and invert to mix. Warning: Liquid will become hot.

Test continued on page 2



COD/1000

Photometric test for Chemical Oxygen Demand in effluents and wastewater

COLOUR CHANGE

Orange to Green

RANGE:

0 - 1000 mg/L O₂

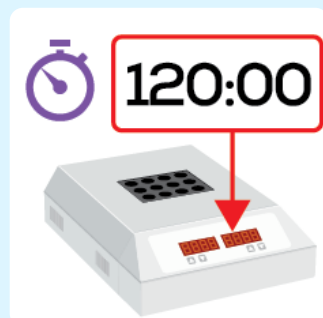
TECHNICAL RESOURCE:

Chemical Oxygen Demand Test Method, Technical Information

NOTES:

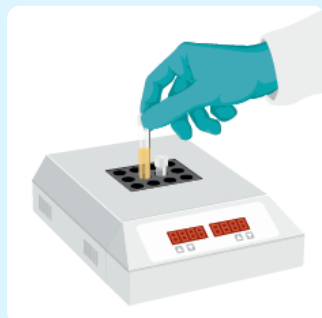
High chloride levels will lead to inaccurately high results. See Test Method Technical Information for details. Switching to "M" or "2M" COD Tubetests will increase the suppression of this interference and/or the sample can be diluted prior to the test to reduce the chloride concentration

09



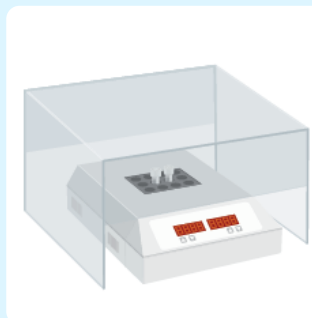
Set timer on heater block to 120 minutes.

10



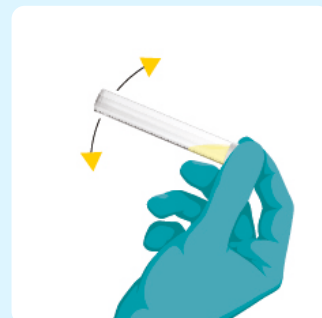
Place both the Blank and the Sample tubes in the heating block.

11



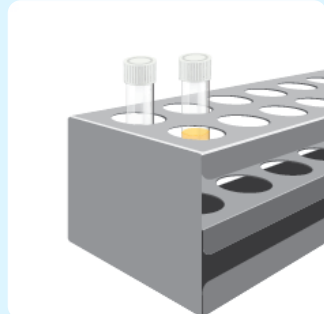
Ensure safety screen is in position and allow digestion to take place for 120 minutes.

12



Carefully remove both tubes and invert to mix.

13



Place in a rack and allow to cool. Ensure any sediment remaining has fully settled.

14



Fit the Tubetest adapter to Lumiso, then, insert blank and press Blank. Note: Retain blank for future use.

15



Place the sample tube in the photometer and press Measure to obtain the COD value.

Palintest

Water Analysis Technologies

COD/150

Photometric test for Chemical Oxygen Demand in effluents and wastewater

COLOUR CHANGE

Orange to Green

RANGE:

0 - 150 mg/L O₂

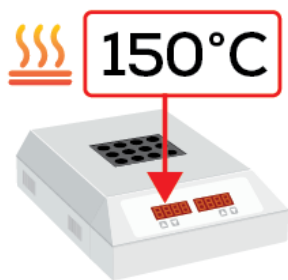
TECHNICAL RESOURCE:

Chemical Oxygen Demand Test Method, Technical Information

NOTES:

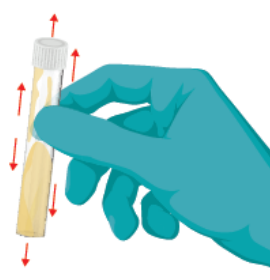
High chloride levels will lead to inaccurately high results. See Test Method Technical Information for details. Switching to "M" or "2M" COD Tubetests will increase the suppression of this interference and/or the sample can be diluted prior to the test to reduce the chloride concentration

01



Turn on heater block and set temperature to 150°C. Note: Timer may need setting above zero for warm up to start.

02



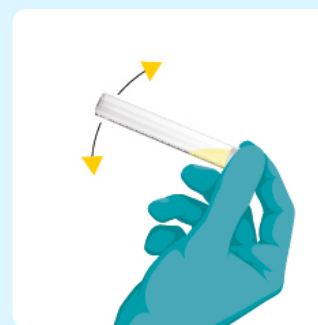
Take an unused Tubetest and shake to suspend the sediment.

03



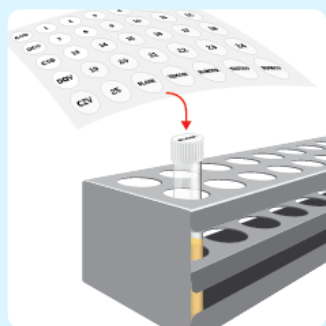
Then, add 2 mL of deionised water.

04



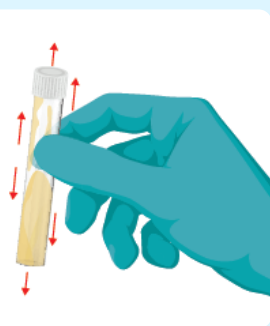
Replace cap tightly and invert to mix. Warning: Liquid will become hot.

05



Place in a rack and label the tube as the "Blank".

06



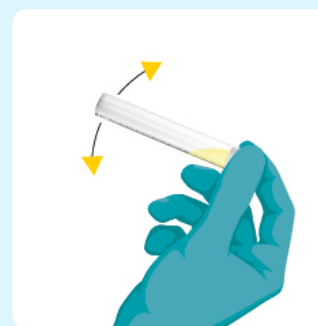
Take a new, unused, Tubetest and shake to suspend the sediment.

07



Then, add 2 mL of sample.

08



Replace cap tightly and invert to mix. Warning: Liquid will become hot.

Test continued on page 2

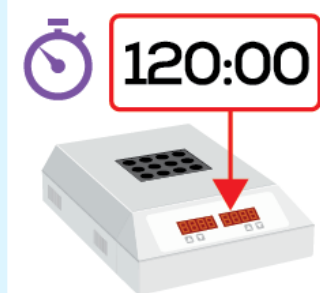


COD/150

Photometric test for Chemical Oxygen Demand in effluents and wastewater

COLOUR CHANGE	Orange to Green
RANGE:	0 - 150 mg/L O ₂
TECHNICAL RESOURCE:	Chemical Oxygen Demand Test Method, Technical Information
NOTES:	High chloride levels will lead to inaccurately high results. See Test Method Technical Information for details. Switching to "M" or "2M" COD Tubetests will increase the suppression of this interference and/or the sample can be diluted prior to the test to reduce the chloride concentration

09



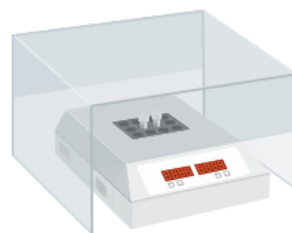
Set timer on heater block to 120 minutes.

10



Place both the Blank and the Sample tubes in the heating block.

11



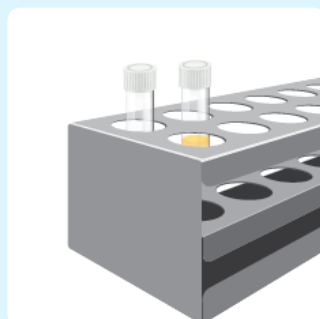
Ensure safety screen is in position and allow digestion to take place for 120 minutes.

12



Carefully remove both tubes and invert to mix.

13



Place in a rack and allow to cool. Ensure any sediment remaining has fully settled.

14



Fit the Tubetest adapter to Lumiso, then, insert blank and press Blank. Note: Retain blank for future use.

15



Place the sample tube in the photometer and press Measure to obtain the COD value.

Palintest

Water Analysis Technologies

COD/2000

Photometric test for Chemical Oxygen Demand in effluents and wastewater

COLOUR CHANGE

Orange to Green

RANGE:

0 - 2000 mg/L O₂

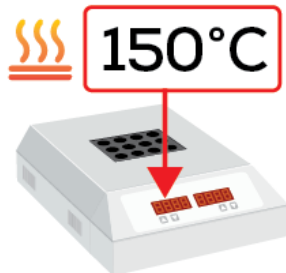
TECHNICAL RESOURCE:

Chemical Oxygen Demand Test Method, Technical Information

NOTES:

High chloride levels will lead to inaccurately high results. See Test Method Technical Information for details. Switching to "M" or "2M" COD Tubetests will increase the suppression of this interference and/or the sample can be diluted prior to the test to reduce the chloride concentration

01



Turn on heater block and set temperature to 150°C. Note: Timer may need setting above zero for warm up to start.

02



Take an unused Tubetest and shake to suspend the sediment.

03



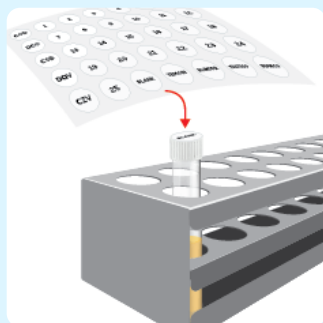
Then, add 2 mL of deionised water.

04



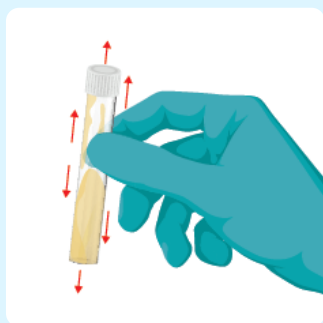
Replace cap tightly and invert to mix. Warning: Liquid will become hot.

05



Place in a rack and label the tube as the "Blank".

06



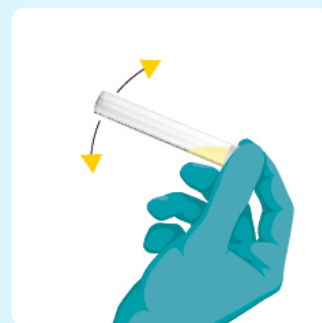
Take a new, unused, Tubetest and shake to suspend the sediment.

07



Then, add 2 mL of sample.

08



Replace cap tightly and invert to mix. Warning: Liquid will become hot.

Test continued on page 2

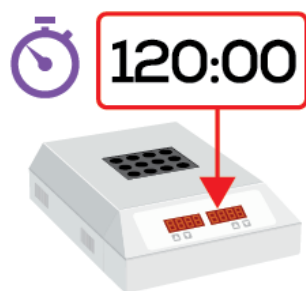


COD/2000

Photometric test for Chemical Oxygen Demand in effluents and wastewater

COLOUR CHANGE	Orange to Green
RANGE:	0 - 2000 mg/L O ₂
TECHNICAL RESOURCE:	Chemical Oxygen Demand Test Method, Technical Information
NOTES:	High chloride levels will lead to inaccurately high results. See Test Method Technical Information for details. Switching to "M" or "2M" COD Tubetests will increase the suppression of this interference and/or the sample can be diluted prior to the test to reduce the chloride concentration

09



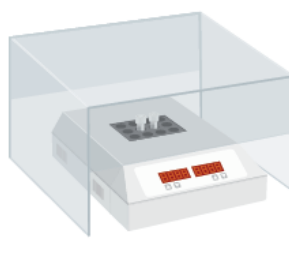
Set timer on heater block to 120 minutes.

10



Place both the Blank and the Sample tubes in the heating block.

11



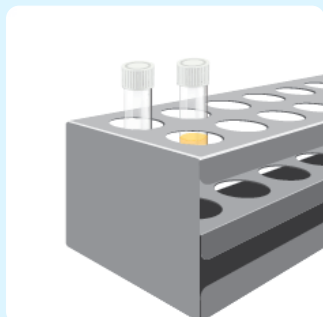
Ensure safety screen is in position and allow digestion to take place for 120 minutes.

12



Carefully remove both tubes and invert to mix.

13



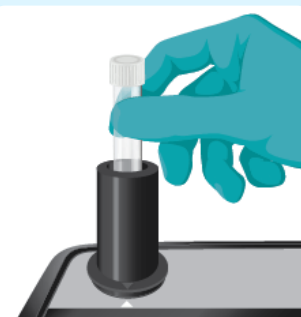
Place in a rack and allow to cool. Ensure any sediment remaining has fully settled.

14



Fit the Tubetest adapter to Lumiso, then, insert blank and press Blank. Note: Retain blank for future use.

15



Place the sample tube in the photometer and press Measure to obtain the COD value.

Palintest

Water Analysis Technologies

COD/20000

Photometric test for Chemical Oxygen Demand in effluents and wastewater

COLOUR CHANGE

Orange to Green

RANGE:

0 - 20000 mg/L O₂

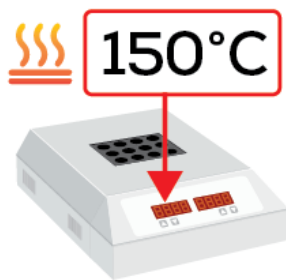
TECHNICAL RESOURCE:

Chemical Oxygen Demand Test Method, Technical Information

NOTES:

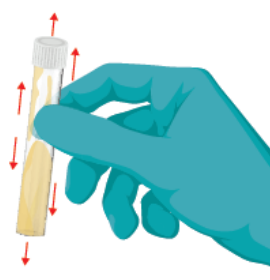
High chloride levels will lead to inaccurately high results. See Test Method Technical Information for details. Switching to "M" or "2M" COD Tubetests will increase the suppression of this interference and/or the sample can be diluted prior to the test to reduce the chloride concentration

01



Turn on heater block and set temperature to 150°C. Note: Timer may need setting above zero for warm up to start.

02



Take an unused Tubetest and shake to suspend the sediment.

03



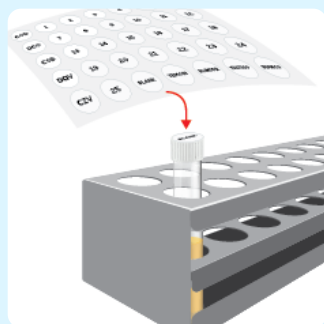
Then, add 0.2 mL of deionised water.

04



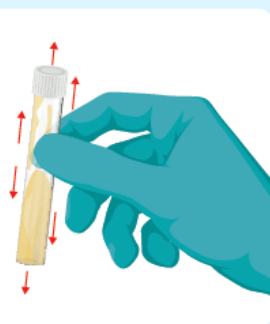
Replace cap tightly and invert to mix. Warning: Liquid will become hot.

05



Place in a rack and label the tube as the "Blank".

06



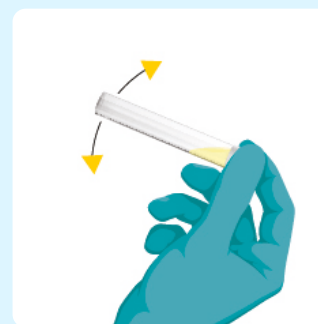
Take a new, unused, Tubetest and shake to suspend the sediment.

07



Then, add 0.2 mL of sample.

08



Replace cap tightly and invert to mix. Warning: Liquid will become hot.

Test continued on page 2



COD/20000

Photometric test for Chemical Oxygen Demand in effluents and wastewater

COLOUR CHANGE

Orange to Green

RANGE:

0 - 20000 mg/L O₂

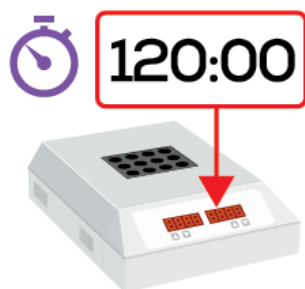
TECHNICAL RESOURCE:

Chemical Oxygen Demand Test Method, Technical Information

NOTES:

High chloride levels will lead to inaccurately high results. See Test Method Technical Information for details. Switching to "M" or "2M" COD Tubetests will increase the suppression of this interference and/or the sample can be diluted prior to the test to reduce the chloride concentration

09



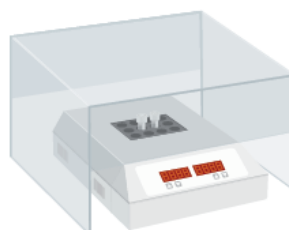
Set timer on heater block to 120 minutes.

10



Place both the Blank and the Sample tubes in the heating block.

11



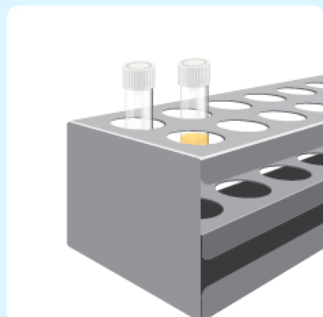
Ensure safety screen is in position and allow digestion to take place for 120 minutes.

12



Carefully remove both tubes and invert to mix.

13



Place in a rack and allow to cool. Ensure any sediment remaining has fully settled.

14



Fit the Tubetest adapter to Lumiso, then, insert blank and press Blank. Note: Retain blank for future use.

15



Place the sample tube in the photometer and press Measure to obtain the COD value.

Palintest

Water Analysis Technologies

COD/400

Photometric test for Chemical Oxygen Demand in effluents and wastewater

COLOUR CHANGE

Orange to Green

RANGE:

0 - 400 mg/L O₂

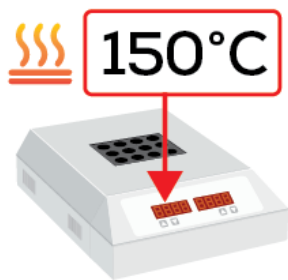
TECHNICAL RESOURCE:

Chemical Oxygen Demand Test Method, Technical Information

NOTES:

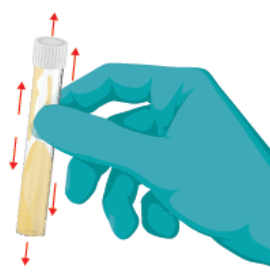
High chloride levels will lead to inaccurately high results. See Test Method Technical Information for details. Switching to "M" or "2M" COD Tubetests will increase the suppression of this interference and/or the sample can be diluted prior to the test to reduce the chloride concentration

01



Turn on heater block and set temperature to 150°C. Note: Timer may need setting above zero for warm up to start.

02



Take an unused Tubetest and shake to suspend the sediment.

03



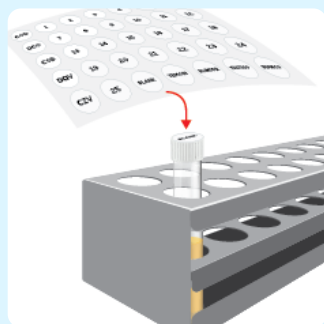
Then, add 2 mL of deionised water.

04



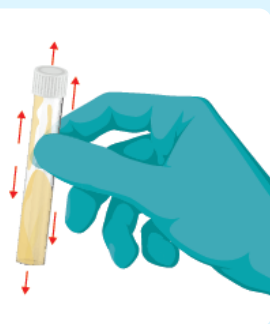
Replace cap tightly and invert to mix. Warning: Liquid will become hot.

05



Place in a rack and label the tube as the "Blank".

06



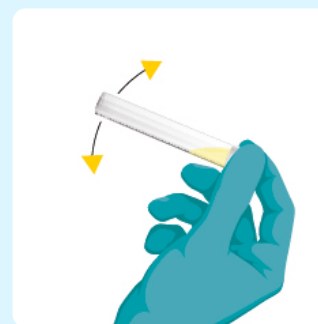
Take a new, unused, Tubetest and shake to suspend the sediment.

07



Then, add 2 mL of sample.

08



Replace cap tightly and invert to mix. Warning: Liquid will become hot.

Test continued on page 2

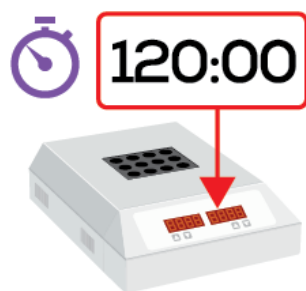


COD/400

Photometric test for Chemical Oxygen Demand in effluents and wastewater

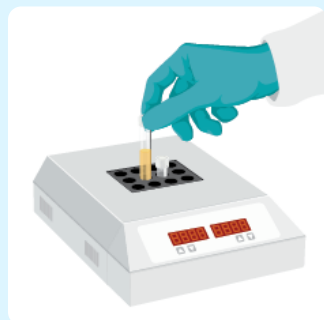
COLOUR CHANGE	Orange to Green
RANGE:	0 - 400 mg/L O ₂
TECHNICAL RESOURCE:	Chemical Oxygen Demand Test Method, Technical Information
NOTES:	High chloride levels will lead to inaccurately high results. See Test Method Technical Information for details. Switching to "M" or "2M" COD Tubetests will increase the suppression of this interference and/or the sample can be diluted prior to the test to reduce the chloride concentration

09



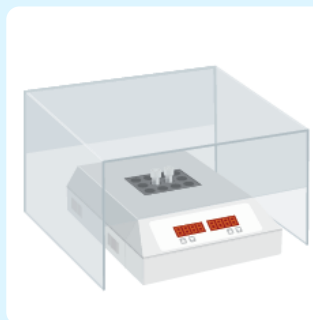
Set timer on heater block to 120 minutes.

10



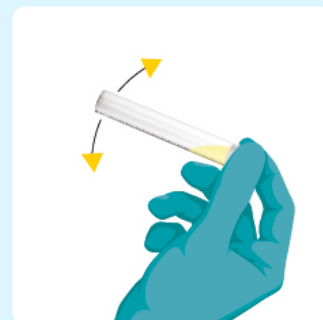
Place both the Blank and the Sample tubes in the heating block.

11



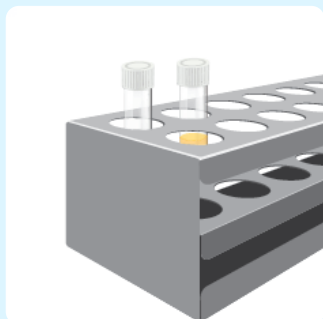
Ensure safety screen is in position and allow digestion to take place for 120 minutes.

12



Carefully remove both tubes and invert to mix.

13



Place in a rack and allow to cool. Ensure any sediment remaining has fully settled.

14



Fit the Tubetest adapter to Lumiso, then, insert blank and press Blank. Note: Retain blank for future use.

15



Place the sample tube in the photometer and press Measure to obtain the COD value.

Palintest

Water Analysis Technologies

Chlorine, Combined (Liquid)

Photometric test for Free, Total and Combined Chlorine in drinking water and pools and spas

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 5 mg/L Cl_2

TECHNICAL RESOURCE:

[Chlorine Test Method, Technical Information](#)

NOTES:

High levels of chlorine can cause bleaching and invalidate the result. If the colour becomes uneven or fades completely, check for bleaching by diluting the sample and repeating the test

01



Fill to the 10 mL line with sample.

02



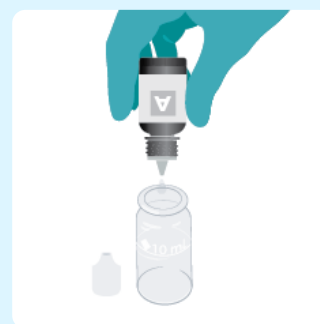
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Pour out sample leaving a few drops.

04



Add three drops of DPD A liquid.

05



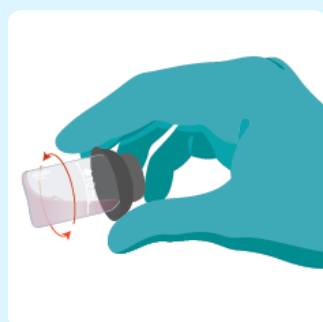
Add three drops of DPD B liquid. Then, swirl to mix.

06



Fill to the 10 mL line with further sample. Then, swirl tube again.

07



Remove any bubbles by holding tube horizontally and rotating.

08



Place the prepared sample in the cell holder and press Measure to obtain the concentration of Free Chlorine.

Test continued on page 2



Chlorine, Combined (Liquid)

Photometric test for Free, Total and Combined Chlorine in drinking water and pools and spas

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 5 mg/L Cl_2

TECHNICAL RESOURCE:

[Chlorine Test Method, Technical Information](#)

NOTES:

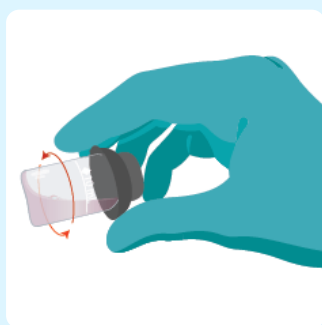
High levels of chlorine can cause bleaching and invalidate the result. If the colour becomes uneven or fades completely, check for bleaching by diluting the sample and repeating the test

09



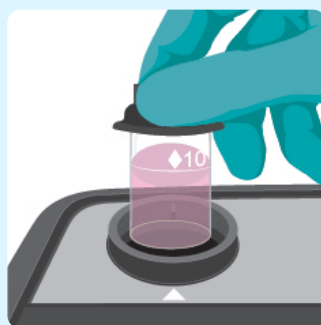
Continue with the same sample and add three drops of DPD C Liquid. Then, swirl to mix.

10



Remove any bubbles by holding tube horizontally and rotating.

11



Place in the cell holder and press Measure.

12



Allow timer to count down 2 minutes. The concentration of Total Chlorine will be displayed. Press Finish to scroll through all Chlorine results.

Palintest

Water Analysis Technologies

Chlorine, Combined (Tablet)

Photometric test for Free, Total and Combined Chlorine in drinking water and pools and spas

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 5 mg/L Cl_2

TECHNICAL RESOURCE:

[Chlorine Test Method, Technical Information](#)

NOTES:

If swimming pool shock treatment chemicals are present, add and crush an Oxystop tablet and wait for 1 minute before adding the DPD 3 tablet

High levels of chlorine can cause bleaching and invalidate the result. If the colour becomes uneven or fades completely, check for bleaching by diluting the sample and repeating the test

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Pour out sample leaving a few drops.

04



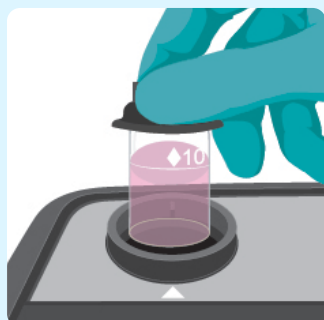
Add a DPD 1 tablet to those drops. Then, crush to form a paste.

05



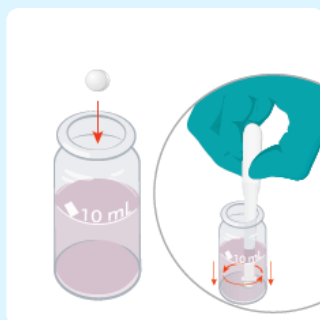
Fill to the 10 mL line with further sample and stir.

06



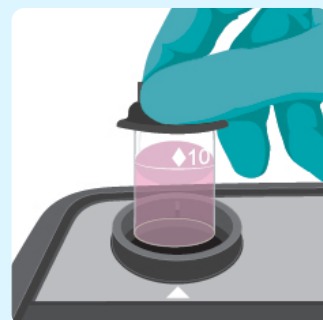
Place the tube in the cell holder and press Measure to obtain the concentration of Free Chlorine. Then, press Continue.

07



Continue, using the same sample. Add a DPD 3 tablet and crush and stir.

08



Place in the cell holder and press Measure.

Test continued on page 2



Chlorine, Combined (Tablet)

Photometric test for Free, Total and Combined Chlorine in drinking water and pools and spas

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 5 mg/L Cl₂

TECHNICAL RESOURCE:

[Chlorine Test Method, Technical Information](#)

NOTES:

If swimming pool shock treatment chemicals are present, add and crush an Oxystop tablet and wait for 1 minute before adding the DPD 3 tablet

09



Allow timer to count down 2 minutes. The concentration of Total Chlorine will be displayed. Press Finish to scroll through all Chlorine results.

Palintest

Water Analysis Technologies

Chlorine, Combined XR

Photometric test for Free, Total and Combined Chlorine in drinking water and pools and spas

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 10 mg/L Cl_2

TECHNICAL RESOURCE:

[Chlorine Test Method, Technical Information](#)

NOTES:

If swimming pool shock treatment chemicals are present, add and crush an Oxystop tablet and wait for 1 minute before adding the DPD 3 tablet

High levels of chlorine can cause bleaching and invalidate the result. If the colour becomes uneven or fades completely, check for bleaching by diluting the sample and repeating the test

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Pour out sample leaving a few drops.

04



Add a DPD XF tablet to those drops. Then, crush to form a paste.

05



Fill to the 10 mL line with further sample and stir.

06



Place the tube in the cell holder and press Measure to obtain the concentration of Free Chlorine. Then, press Continue.

07



Continue, using the same sample. Add a DPD XT tablet and crush and stir.

08



Place in the cell holder and press Measure.

Test continued on page 2



Chlorine, Combined XR

Photometric test for Free, Total and Combined Chlorine in drinking water and pools and spas

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 10 mg/L Cl₂

TECHNICAL RESOURCE:

[Chlorine Test Method, Technical Information](#)

NOTES:

If swimming pool shock treatment chemicals are present, add and crush an Oxystop tablet and wait for 1 minute before adding the DPD 3 tablet

High levels of chlorine can cause bleaching and invalidate the result. If the colour becomes uneven or fades completely, check for bleaching by diluting the sample and repeating the test

09



Allow timer to count down 2 minutes. The concentration of Total Chlorine will be displayed. Press Finish to scroll through all Chlorine results.

Palintest

Water Analysis Technologies

Cyanuric Acid

Photometric test for Cyanuric Acid in swimming pool and spa water

COLOUR CHANGE

Clear to cloudy

RANGE:

0 - 150 mg/L CyA

TECHNICAL RESOURCE:

Cyanuric Acid Test Method, Technical Information

NOTES:

When test result is above 100 mg/L, it is recommended that for the most accurate result, the test is repeated using a x10 dilution of the sample

01



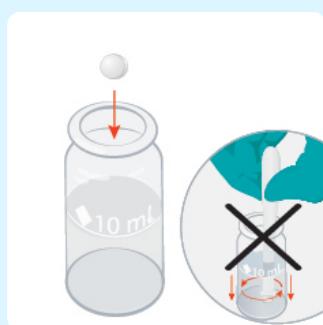
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Cyanuric Acid tablet, but, do not crush.

04



Allow 2 minutes for tablet to disintegrate.

05



Crush any remaining particles and stir.

06



Place the tube in the cell holder and press Measure to obtain concentration of Cyanuric Acid.

Palintest

Water Analysis Technologies

Fluoride

Photometric test for Fluoride in drinking water, natural water and treated water

COLOUR CHANGE

Red to Yellow

RANGE:

0 - 1.5 mg/L F

TECHNICAL RESOURCE:

Fluoride Test Method, Technical Information

01



Fill to the 10 mL line with sample.

02



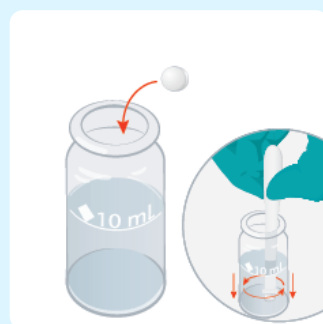
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare the sample by adding 4 drops of the Fluoride Liquid Reagent and stir to mix.

04



Then, add a Fluoride No2 tablet and crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 5 minutes. The concentration of Fluoride will then be displayed.

Palintest

Water Analysis Technologies

Bromine, Free

Photometric test for Free, Total and Combined Bromine in pool, spa and treated water

COLOUR CHANGE

Colourless to Pink

RANGE:

0 – 10 mg/L Br₂

TECHNICAL RESOURCE:

[Bromine Test Method, Technical Information](#)

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Pour out sample leaving a few drops.

04



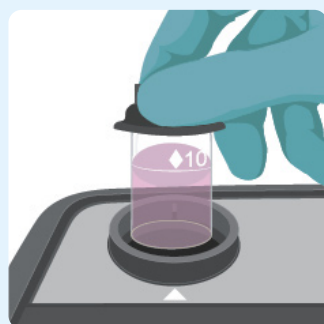
Add a DPD 1 tablet to those drops. Then, crush to form a paste.

05



Fill to the 10 mL line with further sample and stir.

06



Place in the cell holder and press Measure to obtain the concentration of Total Bromine. Then, press Continue.

07



To a clean photometer tube, add a fresh 10 mL of sample.

08



Add a DPD Nitrite tablet. Then, crush and stir.

Test continued on page 2



Bromine, Free

Photometric test for Free, Total and Combined Bromine in pool, spa and treated water

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 10 mg/L Br₂

TECHNICAL RESOURCE:

[Bromine Test Method, Technical Information](#)

09



Pour a few drops of this treated sample into another clean tube. Keep the remainder.

10



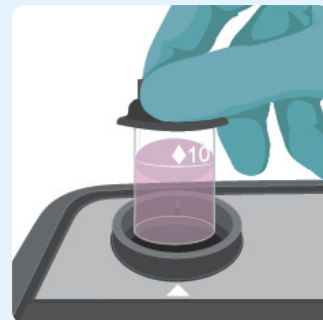
Add a DPD 1 tablet to those drops. Then, crush to form a paste.

11



Pour the remaining treated sample into this tube.

12



Place in the cell holder and press Measure. The Free Bromine result will be displayed. Press Finish to scroll through all the results in this test.

Palintest

Water Analysis Technologies

Cyanide, Free

Photometric test for Free Cyanide in groundwater, surface water and drinking water

COLOUR CHANGE

Colourless to Blue

RANGE:

0 - 0.5 mg/L Al

NOTES:

Collect samples in a clean plastic bottle and test as soon as possible after collection

01



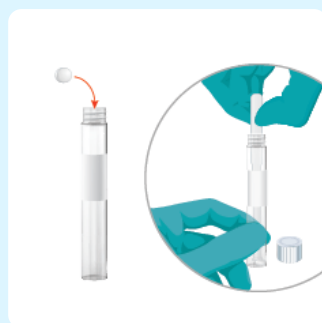
Add 10 mL of sample to a clean tube. Note: this test uses a 16 mm diameter tube.

02



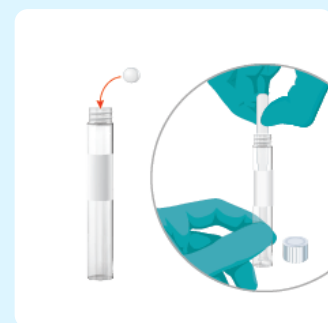
Use this to "blank" the instrument. Fit the Tubetest adapter to Lumiso, insert tube and press Blank.

03



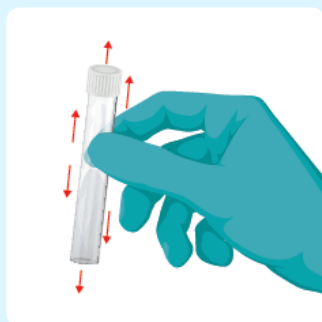
Add a Cyanide No 1 tablet and crush and stir.

04



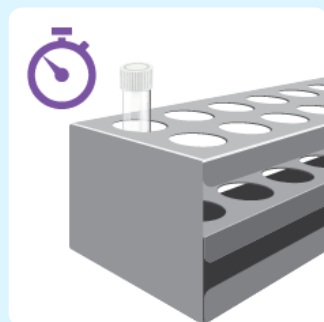
Then, add a Cyanide No 2 tablet and crush and stir

05



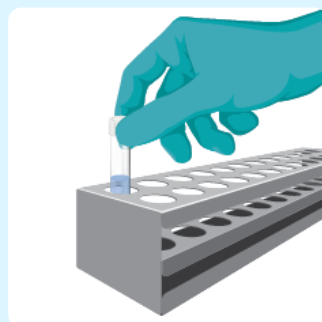
Replace cap and shake tube briefly.

06



Allow 10 minutes for colour development. Allow further time if needed for any sediment to fully settle.

07



If turbidity has developed, then test will need to be restarted with a filtered sample.

08



Place in the cell holder and press Measure to display the concentration of Cyanide.

Palintest

Water Analysis Technologies

Hydrogen Peroxide HR

Photometric test for Hydrogen Peroxide (high range) in process water and swimming pool water

COLOUR CHANGE

Colourless to Yellow

RANGE:

0 - 100 mg/L H_2O_2

TECHNICAL RESOURCE:

Hydrogen Peroxide HR Test Method, Technical Information

NOTES:

Sample needs to be free of any other oxidising agents, such as chlorine, bromine, ozone etc

01



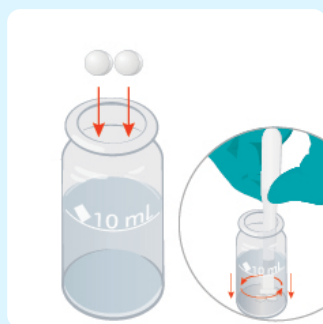
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding an Acidifying PT tablet and a Hydrogen Peroxide HR tablet. Crush both tablets and stir.

04



Place in cell holder and press Measure to obtain concentration of Hydrogen Peroxide.

Palintest

Water Analysis Technologies

Hydrogen Peroxide LR

Photometric test for Hydrogen Peroxide (low range) in process water and treated water

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 2 mg/L H_2O_2

TECHNICAL RESOURCE:

Hydrogen Peroxide LR Test Method, Technical Information

NOTES:

Sample needs to be free of any other oxidising agents, such as chlorine, bromine, ozone etc

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Pour out sample leaving a few drops.

04



Add a Hydrogen Peroxide LR tablet to those drops. Then, crush to form a paste.

05



Fill to the 10 mL line with further sample and stir.

06



Place in the cell holder and press Measure.

07



Allow timer to count down 2 minutes. The concentration of Hydrogen Peroxide will then be displayed.

Palintest

Water Analysis Technologies

Iron HR

Photometric test for Iron (high range) in process water, treated water and drinking water

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 10 mg/L Fe

TECHNICAL RESOURCE:

[Iron HR Test Method, Technical Information](#)

NOTES:

Colour development is normally complete within 1 minute. If colour development continues after that time, it is likely that iron complexes are present. Wait further time for colour to stabilize, allowing up to 15 minutes

01



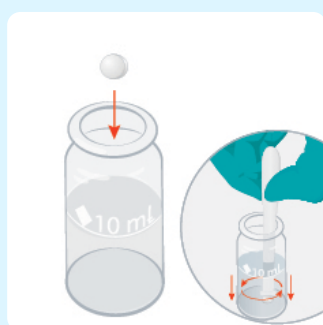
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Then, prepare sample by adding an Iron HR tablet and crush and stir.

04



Place in the cell holder and press Measure.

05



Allow timer to count down 1 minute. The concentration of Iron will then be displayed.

Palintest

Water Analysis Technologies

Iron MR [MoO₄ present]

Photometric test for Iron (medium range) in natural, treated and drinking water, corrected for molybdate interference

COLOUR CHANGE

Colourless to Orange

RANGE:

0 - 5 mg/L Fe

TECHNICAL RESOURCE:

Iron MR Test Method, Technical Information

01



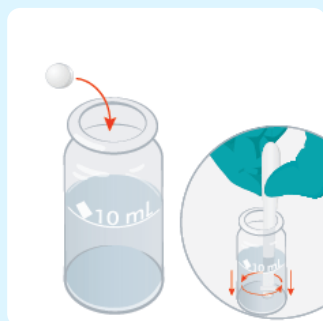
Fill to the 10 mL line with sample.

02



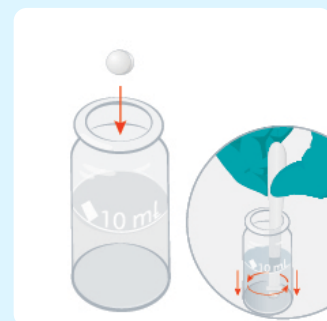
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



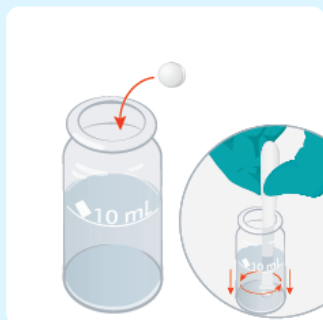
Prepare sample by adding an Iron MR No1 tablet and crush and stir.

04



Add a Citrate IR tablet. Crush and stir until fully dissolved.

05



Then, add an Iron MR No2 tablet and crush and stir.

06



Place in the cell holder and press Measure.

07



Allow timer to count down 15 minutes. The concentration of Iron will then be displayed.

Palintest

Water Analysis Technologies

Iron MR [Nitrite present]

Photometric test for Iron (medium range with correction for nitrite interference) in natural, treated and drinking water

COLOUR CHANGE

Colourless to Orange

RANGE:

0 - 5 mg/L Fe

TECHNICAL RESOURCE:

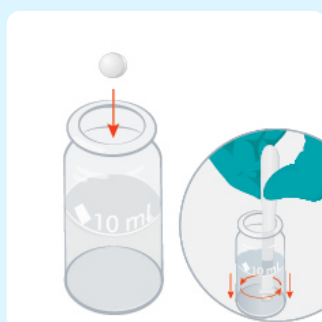
Iron MR Test Method, Technical Information

01



Fill to the 10 mL line with sample.

02



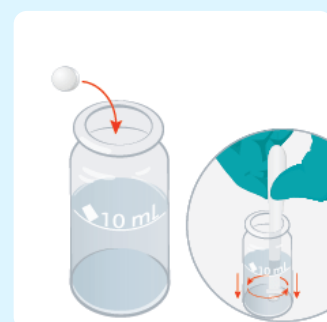
Add a Citrate IR tablet. Crush and stir until fully dissolved.

03



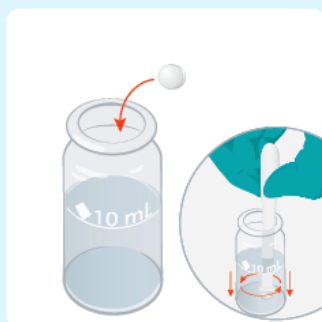
Use this to "blank" the instrument. Place in cell holder and press Blank.

04



Continue with same sample. Add an Iron MR No1 tablet and crush and stir.

05



Then, add an Iron MR No2 tablet and crush and stir.

06



Place in the cell holder and press Measure.

07



Allow timer to count down 15 minutes. The concentration of Iron will then be displayed.

Palintest

Water Analysis Technologies

Magnesium

Photometric test for Magnesium in natural and drinking water

COLOUR CHANGE

Yellow to Orange

RANGE:

0 - 100 mg/L Mg

TECHNICAL RESOURCE:

Magnesium Test Method, Technical Information

01



Add 1 mL of sample to a photometer tube.

02



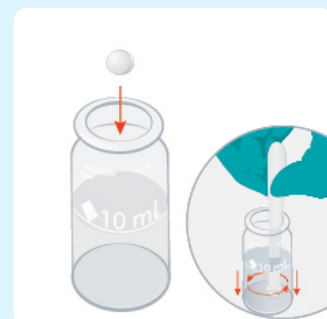
Fill to the 10 mL line with deionised water.

03



Use this to "blank" the instrument. Place in cell holder and press Blank.

04



Prepare sample by adding a Magnecol tablet and crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 5 minutes. The concentration of Magnesium will then be displayed.

www.palintest.com

Palintest

Water Analysis Technologies

Magnesium – 0-10mg/L

Photometric test for Magnesium in natural and drinking water

COLOUR CHANGE

Colourless to Purple

RANGE:

0 – 10 mg/L Mg

TECHNICAL RESOURCE:

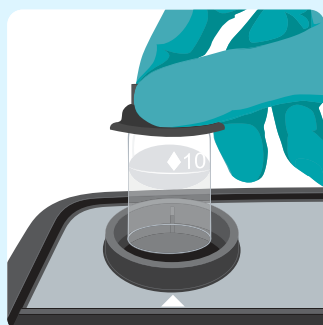
Magnesium Test Method, Technical Information

01



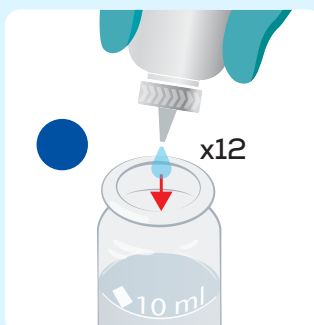
Fill to the 10 mL line with sample.

02



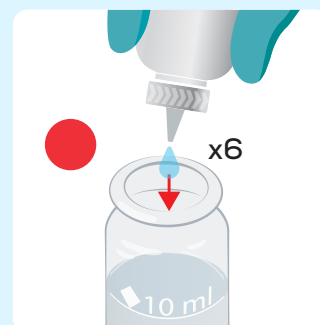
Use this to "blank" the instrument. Place in the cell holder and press Blank.

03



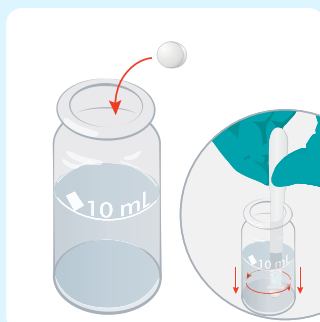
Prepare the sample by adding 12 drops of Magnecol liquid reagent 1 and stir.

04



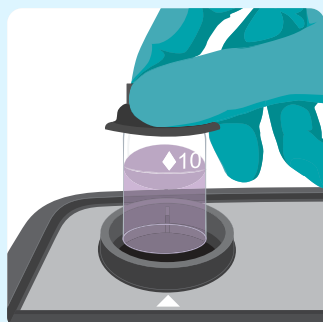
Prepare the sample by adding 6 drops of Magnecol liquid reagent 2 and stir.

05



Then, add a Magnecol tablet. Thoroughly crush and stir, until fully dissolved.

06



Place in the cell holder and press Measure.

07



Allow timer to count down 2 minutes. The result for Magnesium will be displayed.

Palintest

Water Analysis Technologies

Magnesium – 10-50mg/L

Photometric test for Magnesium in natural and drinking water

COLOUR CHANGE

Colourless to Purple

RANGE:

10 – 50 mg/L Mg

TECHNICAL RESOURCE:

Magnesium Test Method, Technical Information

01



Add 2mL of sample to a photometer tube

02



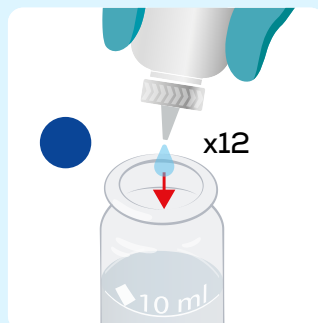
Fill to the 10 mL line with DI water.

03



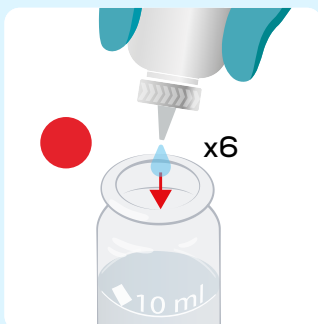
Use this to "blank" the instrument. Place in the cell holder and press Blank.

04



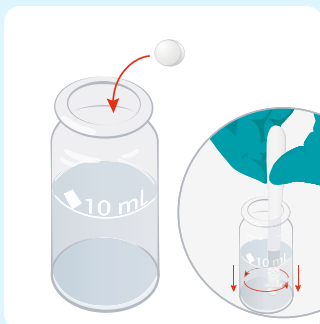
Prepare the sample by adding 12 drops of Magnecol liquid reagent 1 and stir.

05



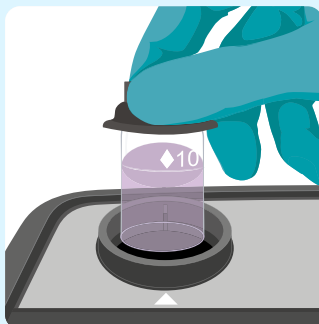
Prepare the sample by adding 6 drops of Magnecol liquid reagent 2 and stir.

06



Then, add a Magnecol tablet. Thoroughly crush and stir, until fully dissolved.

07



Place in the cell holder and press Measure.

08



Allow timer to count down 2 minutes. The result for Magnesium will be displayed.

Palintest

Water Analysis Technologies

Manganese HR

Photometric test for Manganese (high range) in natural water

COLOUR CHANGE

Colourless to Orange/Red

RANGE:

0 - 5 mg/L Mn

TECHNICAL RESOURCE:

[Manganese HR Test Method, Technical Information](#)

NOTES:

Because manganese is adsorbed on to surfaces of sample containers. Test as soon as possible after collection
Ensure that all glassware is scrupulously clean. Acid rinsing is highly recommended

01



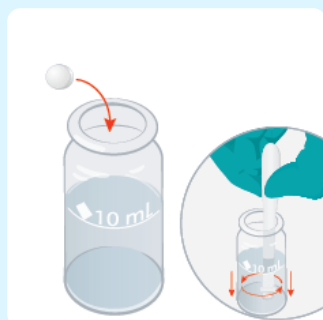
Fill to the 10 mL line with sample.

02



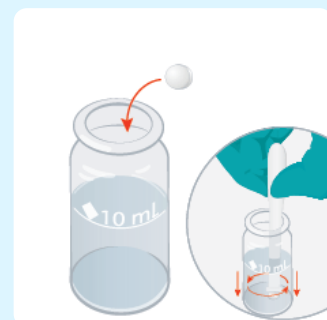
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Manganese HR No1 tablet. Then, crush and stir.

04



Then, add a Manganese HR No2 tablet. Crush and stir until fully dissolved.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 5 minutes. The concentration of Manganese will then be displayed.

Palintest

Water Analysis Technologies

Manganese HR

Photometric test for Manganese (high range) in natural water

COLOUR CHANGE

Colourless to Orange/Red

RANGE:

0 - 5 mg/L Mn

TECHNICAL RESOURCE:

[Manganese HR Test Method, Technical Information](#)

NOTES:

Because manganese is adsorbed on to surfaces of sample containers. Test as soon as possible after collection
Ensure that all glassware is scrupulously clean. Acid rinsing is highly recommended

01



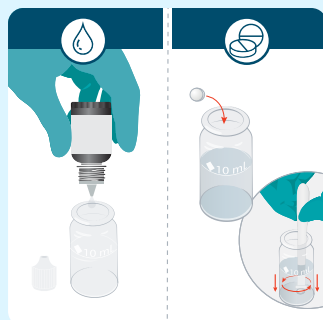
Fill to the 10 mL line with sample.

02



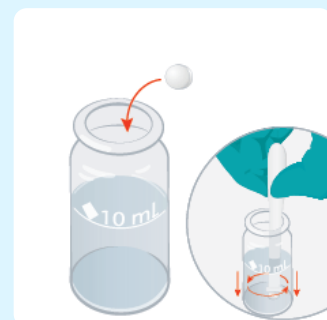
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding two drops of Mn HR liquid or a Mn HR No2 tablet.

04



Then, add a Manganese HR No1 tablet. Crush and stir until fully dissolved.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 5 minutes. The concentration of Manganese will then be displayed.

Palintest

Water Analysis Technologies

Manganese LR - Liquid+Tablets

Photometric test for Manganese (low range) in natural water

COLOUR CHANGE:

Colourless to Turquoise

RANGE:

0 - 0.03 mg/L Mn

TECHNICAL RESOURCE:

[Manganese LR Test Method, Technical Information](#)

NOTES:

Because manganese is adsorbed on to surfaces of sample containers. Test as soon as possible after collection
Ensure that all glassware is scrupulously clean. Acid rinsing is highly recommended

01



Fill to the 10 mL line with sample. Note: Sample temperature needs to be between 19°C and 21°C.

02



Use this to "blank" the instrument. Place in the cell holder and press Blank.

03



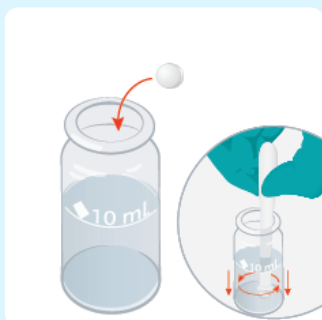
Add two drops of Manganese LR Liquid Reagent

04



Add one Manganese LR No 1 tablet and crush and stir.

05



Then, add a Manganese No2 tablet and crush and stir.

06



Allow to stand for 20:00. Press measure on to start a timer. Cap the tube and invert to disperse any bubbles formed.

07



Add the tube to the photometer and press measure. The result is displayed as mg/L Mn.

Palintest

Water Analysis Technologies

Molybdate HR

Photometric test for Molybdate (high range) in treated water and waste water

COLOUR CHANGE

Colourless to Yellow

RANGE:

0 - 100 mg/L MoO₄

TECHNICAL RESOURCE:

Molybdate HR Test Method, Technical Information

NOTES:

Iron in the sample can cause high readings. This can be prevented by adding and crushing an EDTA tablet in the 10 mL sample prior to step 1 of the test method

01



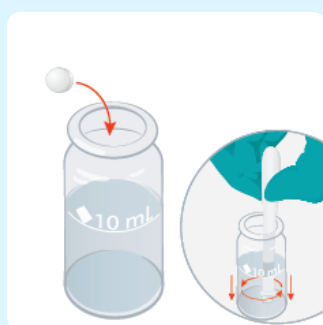
Fill to the 10 mL line with sample.

02



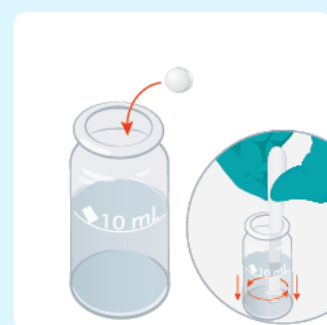
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Molybdate HR No1 tablet and crush and stir.

04



Then, add a Molybdate HR No2 tablet and crush and stir.

05



Place the tube in the cell holder and press Measure to obtain the concentration of Molybdate.

Palintest

Water Analysis Technologies

Molybdate LR

Photometric test for Molybdate LR

COLOUR CHANGE

Colourless to Yellow

RANGE:

0 - 20 mg/L MoO_4

TECHNICAL RESOURCE:

Molybdate LR Test Method, Technical Information

01



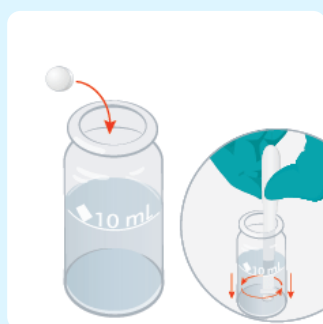
Fill to the 10 mL line with sample.

02



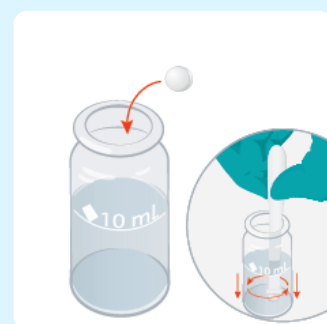
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Molybdate LR No1 tablet and crush and stir.

04



Then, add a Molybdate LR No2 tablet and crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 2 minutes. The concentration of Molybdate will then be displayed.

Palintest

Water Analysis Technologies

Nickel

Photometric test for Nickel in treated water and waste water

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 10 mg/L Ni

TECHNICAL RESOURCE:

Nickel Test Method, Technical Information

01



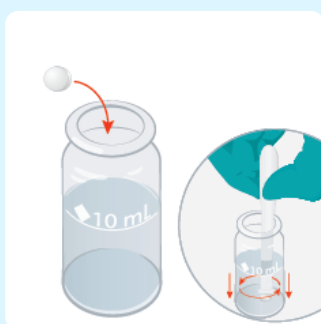
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



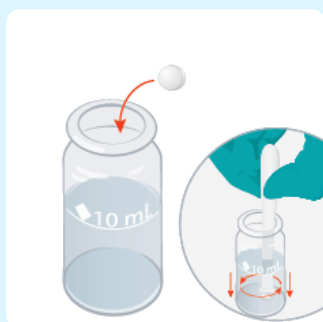
Prepare sample by adding a Nickeltest No 1 tablet and crush and stir.

04



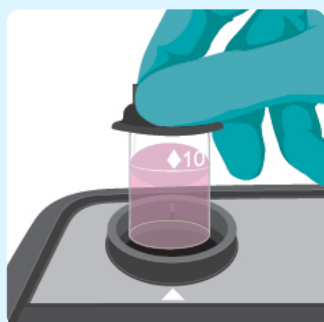
If Iron is present add a level spoonful of Nickeltest PR powder and stir. (Otherwise skip this step).

05



Then, add a Nickeltest No2 Tablet and crush and stir.

06



Place in the cell holder and press Measure.

07



Allow timer to count down 2 minutes. The concentration of Nickel will then be displayed.

Palintest

Water Analysis Technologies

Nitrate/30N

Photometric test for Nitrate in natural, drinking and wastewater

COLOUR CHANGE

Colourless to Yellow

RANGE:

0 - 30 mg/L N

TECHNICAL RESOURCE:

Nitrate 30N Test Method, Technical Information

NOTES:

Tubetests Nitrate Powder is light sensitive. Keep lid closed when not in use

01



Fit the Tubetest adapter to Lumiso. Then, "blank" instrument by placing an unused Nitrate/30N Tubetest in the cell holder and pressing Blank.

02



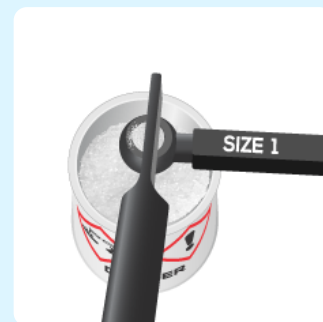
Slowly, add 1 mL of sample to a Nitrate/30N Tubetest. Avoid disturbing contents of tube. DO NOT SHAKE.

03



Place tube in rack and fit the dosing funnel.

04



Take the Size 1 Dosing Scoop and fill it with Tubetests Nitrate powder. Then, draw the scraper across the scoop to ensure a level fill.

05



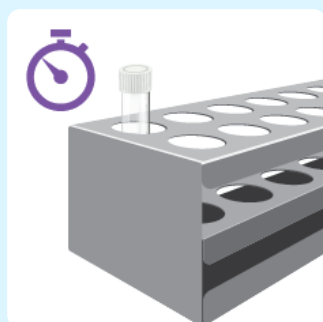
Locate the scoop in the funnel and rotate it so that the powder falls in to the tube. Tap back of scoop.

06



Ensure cap is fully tightened, then slowly invert tube five times. Warning: Tube will become hot.

07



Place in rack and wait 5 minutes.

08



Then, place the tube in the cell holder and press Measure to display the Nitrate concentration.

www.palintest.com

Palintest

Water Analysis Technologies

Nitrite HR

Photometric test for Nitrite (high range) in cooling and treated water

COLOUR CHANGE

Colourless to Yellow to Brown

RANGE:

0 - 1500 mg/L NaNO_2

TECHNICAL RESOURCE:

Nitrite (Nitriphot) Test Method, Technical Information

NOTES:

Sample temperature needs to be below 30°C

01



Add 1 mL of sample to a photometer tube.

02



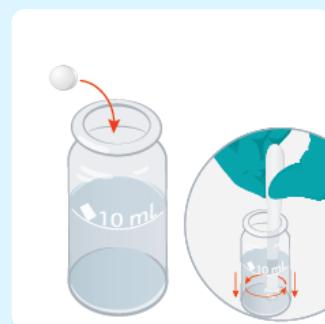
Fill to the 10 mL line with deionised water.

03



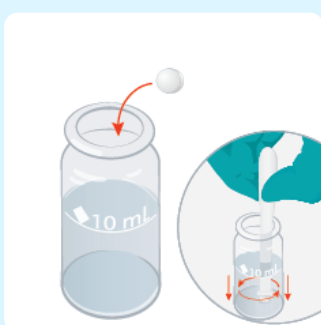
Use this to "blank" the instrument. Place in cell holder and press Blank.

04



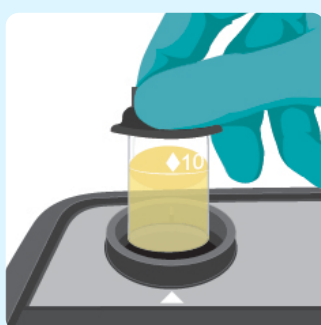
Prepare sample by adding a Nitriphot No1 tablet. Then crush and stir.

05



Add a Nitriphot No2 tablet and crush vigorously, then stir.

06



Without delay, place tube in cell holder and press Measure.

07



Allow timer to count down 2 minutes. The concentration of Nitrite will then be displayed.

Palintest

Water Analysis Technologies

Ozone

Photometric test for Ozone in drinking and treated water

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 3 mg/L O₃

TECHNICAL RESOURCE:

Ozone Test Method, Technical Information

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Pour out sample leaving a few drops.

04



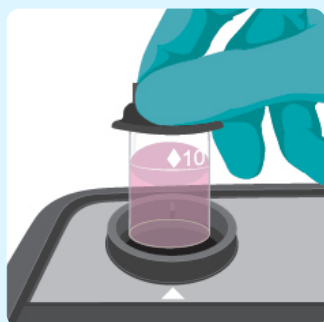
Add a DPD 4 tablet to those drops. Then, crush to form a paste.

05



Fill to the 10 mL line with further sample and stir.

06



Place the tube in the cell holder and press Measure to obtain the Ozone concentration.

Palintest

Water Analysis Technologies

Ozone [with Cl_2 or Br_2]

Photometric test for Ozone in drinking and treated water with correction if chlorine or bromine are present

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 3 mg/L O_3

TECHNICAL RESOURCE:

Ozone Test Method, Technical Information

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Pour out sample leaving a few drops.

04



Add a DPD 4 tablet to those drops. Then, crush to form a paste.

05



Fill to the 10 mL line with further sample and stir.

06



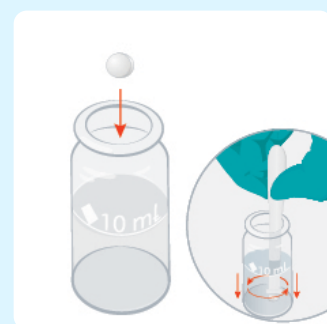
Place the tube in the cell holder and press Measure. This value will be the uncorrected concentration of Ozone. Then, press Continue.

07



To a clean photometer tube, add a fresh 10 mL of sample.

08



Add a Glycine tablet and crush and stir.

Test continued on page 2



Ozone [with Cl₂ or Br₂]

Photometric test for Ozone in drinking and treated water with correction if chlorine or bromine are present

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 3 mg/L O₃

TECHNICAL RESOURCE:

Ozone Test Method, Technical Information

09



Pour a few drops of this glycine treated sample into a second tube. Keep the remainder.

10



Add a DPD 4 tablet to those drops. Then, crush to form a paste.

11



Pour the remaining treated sample into this tube.

12



Place in the cell holder and press Measure to obtain the Ozone concentration after correction for chlorine or bromine.

Palintest

Water Analysis Technologies

pH-Phenol Red.

Photometric test for pH in pool and spa water temperature (27°C to 39°C) using Phenol Red

COLOUR CHANGE

Yellow to Red

RANGE:

6.5 - 8.4 pH units

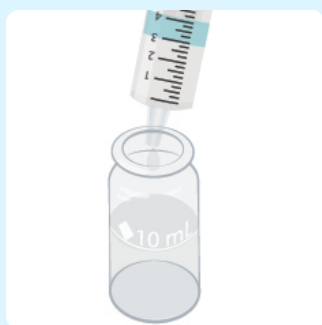
TECHNICAL RESOURCE:

[pH-Phenol Red Test Method, Technical Information](#)

NOTES:

High levels of chlorine or other disinfectants will cause an intense purple coloration. This will mean the result is not valid
Ionic strength, temperature and other water factors may have an effect on pH readings. This test has been calibrated for conditions most likely to be encountered in spas and swimming pools from 27°C to 39°C

01



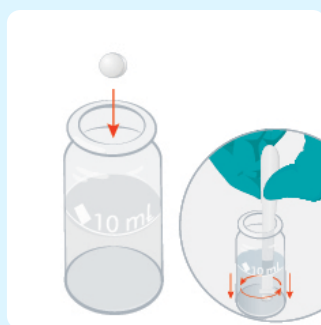
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Phenol Red tablet and crush and stir.

04



Place the tube in the cell holder and press Measure to obtain the pH value.

Palintest

Water Analysis Technologies

Phosphate HR

Photometric test for Phosphate (high range) in boiler water

COLOUR CHANGE

Colourless to Yellow

RANGE:

0 - 100 mg/L PO₄

TECHNICAL RESOURCE:

Phosphate HR Test Method, Technical Information

01



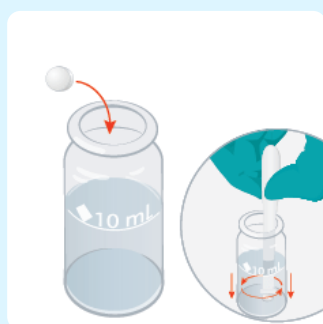
Fill to the 10 mL line with sample.

02



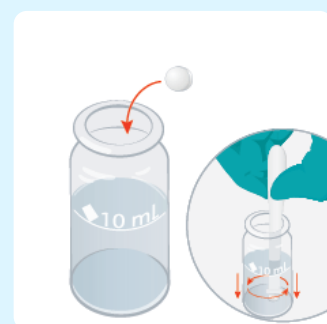
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



If sample contains Silica above 20 mg/L, add a Phosphate SR tablet and crush. Otherwise, skip to next step.

04



Add a Phosphate HR Tablet and crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 10 minutes. The concentration of Phosphate will then be displayed.

Palintest

Water Analysis Technologies

Phosphate/12P

Photometric test for Total Phosphate in natural water and wastewater

COLOUR CHANGE

Colourless to Blue

RANGE:

0 - 12 mg/L P

TECHNICAL RESOURCE:

Phosphate 12P Test Method, Technical Information

01



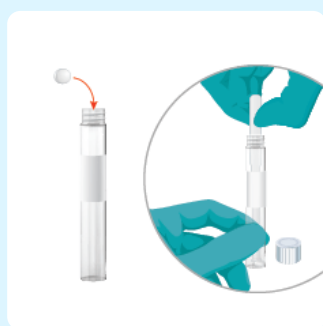
Add 2 mL of sample to a Tubetest.

02



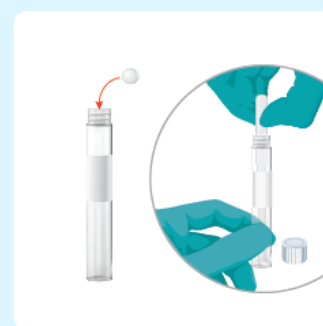
Use this to "blank" the instrument. Fit the Tubetest adapter to Lumiso, insert tube and press Blank.

03



Continue with the same tube by adding a Tubetest Phos No1 tablet. Crush and stir, until fully dissolved.

04



Then, add a Tubetest Phos No2 tablet and crush and stir.

05



Ensure cap is tight, then invert tube a few times to mix.

06



Place in the cell holder and press Measure.

07



Allow timer to count down 10 minutes. Concentration of Phosphate will then be displayed.

Palintest

Water Analysis Technologies

Potassium

Photometric test for Potassium in natural, drinking and treated water

COLOUR CHANGE

Clear to Cloudy

RANGE:

0 - 12 mg/L K

TECHNICAL RESOURCE:

Potassium Test Method, Technical Information

01



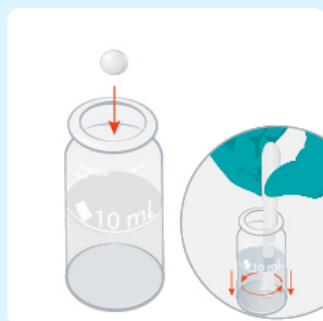
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample, by adding a Potassium K tablet. Then, crush and stir.

04



Place in the cell holder and press Measure.

05



Allow timer to count down 1 minute. The concentration of Potassium will then be displayed.

Palintest

Water Analysis Technologies

Cyanide, Readily liberated

Photometric test for Readily Liberated Cyanide in groundwater, surface water and drinking water

COLOUR CHANGE

Colourless to Blue

RANGE:

0 - 0.5 mg/L

NOTES:

Collect samples in a clean plastic bottle and test as soon as possible after collection

01



Turn on heater block and set temperature to 120°C. Note: Timer may need setting above zero for warm up to start.

02



Add 10 mL of sample to a clean tube. Note: this test uses a 16 mm diameter tube.

03



Use this to "blank" the instrument. Fit the Tubetest adapter to Lumiso, insert tube and press Blank.

04



Add a Cyanide Acid Digestion tablet and replace cap securely. Do Not Crush.

05



Set timer on heater block to 30 minutes.

06



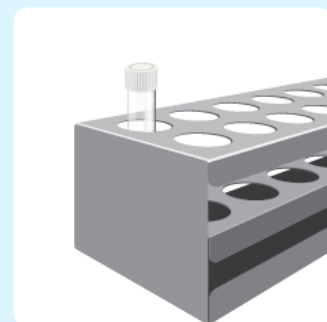
Place the tube in the heating block.

07



Ensure safety screen is in position, and digest tube at 120°C for 30 minutes.

08



Carefully remove tube and place in a rack to cool.

Test continued on page 2



Cyanide, Readily liberated

Photometric test for Readily Liberated Cyanide in groundwater, surface water and drinking water

COLOUR CHANGE

Colourless to Blue

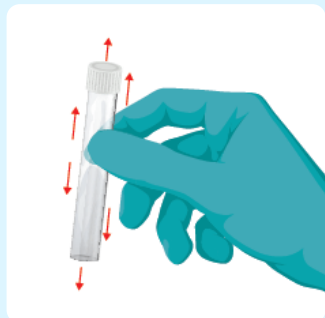
RANGE:

0 - 0.5 mg/L

NOTES:

Collect samples in a clean plastic bottle and test as soon as possible after collection

09



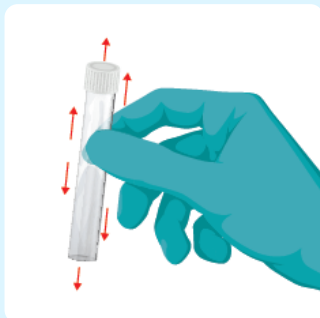
When cool, shake tube.

10



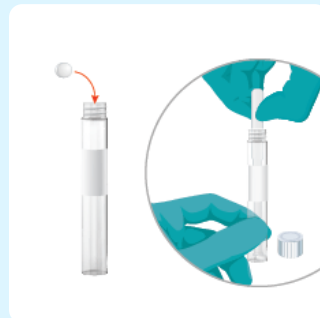
Immediately, add three drops of Cyanide Neut reagent.

11



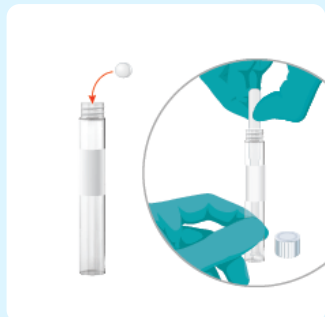
Replace cap and shake tube briefly.

12



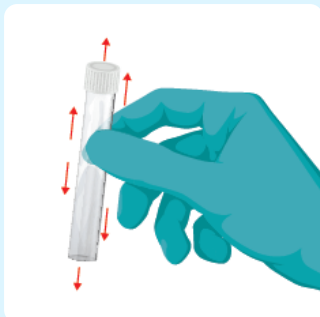
Add a Cyanide No 1 tablet and crush and stir.

13



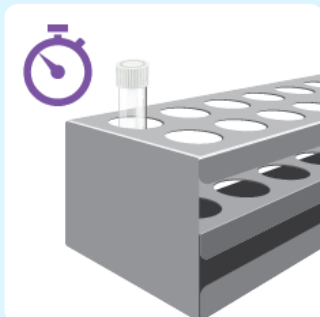
Then, add a Cyanide No 2 tablet and crush and stir

14



Replace cap and shake tube briefly.

15



Allow 10 minutes for colour development. Allow further time if needed for any sediment to fully settle.

16



If turbidity has developed, then test will need to be restarted with a filtered sample.

17



Place in the cell holder and press Measure to display the concentration of Cyanide.

Palintest

Water Analysis Technologies

Salt HR

Photometric test for Salt (high range) in seawater and brackish water

COLOUR CHANGE

Clear to Cloudy

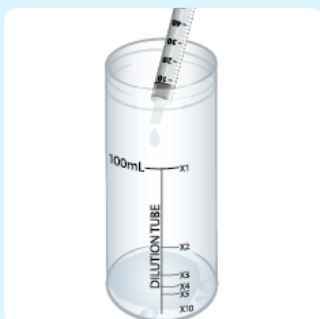
RANGE:

0 - 50000 mg/L NaCl

TECHNICAL RESOURCE:

Chloride & Salt (Chloridol) Test Method, Technical Information

01



Add 0.1 mL of sample to a dilution tube. Then fill to 100 mL mark with deionised water. Replace cap and shake well to mix.

02



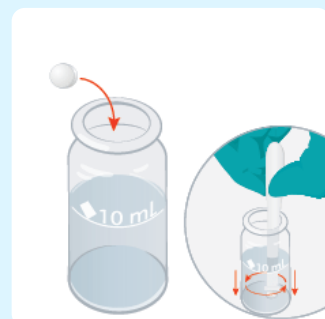
Transfer 10 mL to a photometer tube.

03



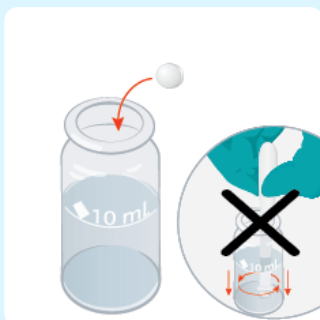
Use this to "blank" the instrument. Place in cell holder and press Blank.

04



Prepare sample by adding an Acidifying CD tablet and crush and stir.

05



Then, add a Chloridol tablet. But, do not crush.

06



Allow 2 minutes for tablet to disintegrate.

07



Crush any remaining particles and stir.

08



Place in cell holder and press Measure to obtain concentration of Salt (sodium chloride).

Palintest

Water Analysis Technologies

Salt LR

Photometric test for Salt (low range) in Swimming Pools using salt based chlorination

COLOUR CHANGE

Clear to Cloudy

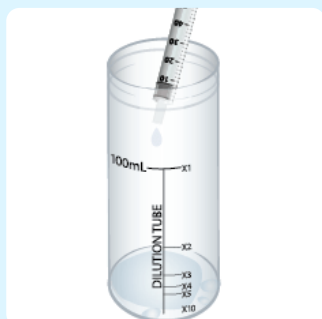
RANGE:

0 - 10000 mg/L NaCl

TECHNICAL RESOURCE:

Chloride & Salt (Chloridol) Test Method, Technical Information

01



Add 0.5 mL of sample to a dilution tube. Then fill to 100 mL mark with deionised water. Replace cap and shake well to mix.

02



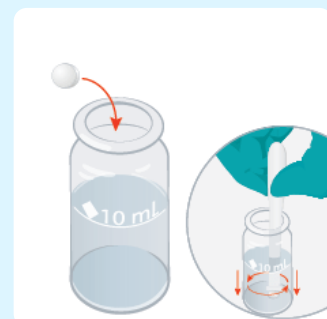
Transfer 10 mL to a photometer tube.

03



Use this to "blank" the instrument. Place in cell holder and press Blank.

04



Prepare sample by adding an Acidifying CD tablet and crush and stir.

05



Then, add a Chloridol tablet. But, do not crush.

06



Allow 2 minutes for tablet to disintegrate.

07



Crush any remaining particles and stir.

08



Place in cell holder and press Measure to obtain concentration of Salt (sodium chloride).

Palintest

Water Analysis Technologies

Silica HR

Photometric test for Silica (high range) in natural and treated water

COLOUR CHANGE

Colourless to Yellow

RANGE:

0 - 150 mg/L SiO_2

TECHNICAL RESOURCE:

Silica HR Test Method, Technical Information

01



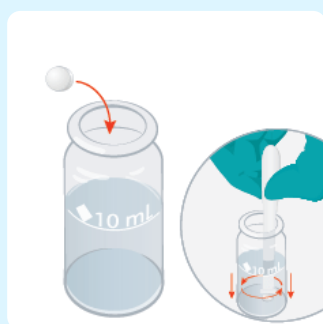
Fill to the 10 mL line with sample.

02



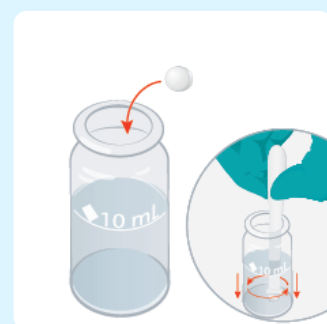
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Silica HR No1 tablet and crush and stir.

04



Then, add a Silica HR No 2 tablet and crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 10 minutes. The concentration of Silica will then be displayed.

Palintest

Water Analysis Technologies

Silica HR [PO_4 or Cl_2]

Photometric test for Silica (high range) in natural and treated water (corrected for phosphate and chlorine interference)

COLOUR CHANGE

Colourless to Yellow

RANGE:

0 - 150 mg/L SiO_2

TECHNICAL RESOURCE:

Silica HR Test Method, Technical Information

01



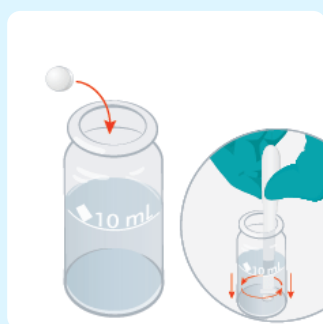
Fill to the 10 mL line with sample.

02



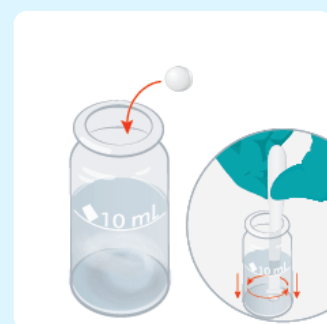
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Silica HR No1 tablet and crush and stir.

04



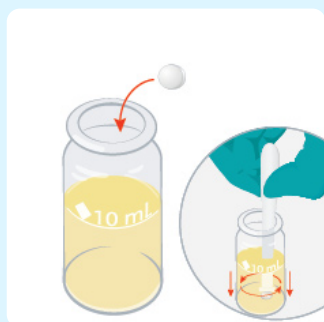
Then, add a Silica HR No 2 tablet and crush and stir.

05



Wait 10 minutes to allow colour development.

06



Then, add a Silica PR tablet and crush and stir.

07



Place in the cell holder and press Measure.

08



Allow timer to count down 2 minutes. The concentration of Silica will then be displayed.

Palintest

Water Analysis Technologies

Silica LR

Photometric test for Silica (low range) in natural, treated and industrial water

COLOUR CHANGE

Colourless to Blue

RANGE:

0 - 4 mg/L SiO_2

TECHNICAL RESOURCE:

Silica LR Test Method, Technical Information

01



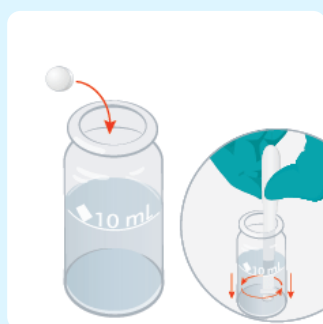
Fill to the 10 mL line with sample.

02



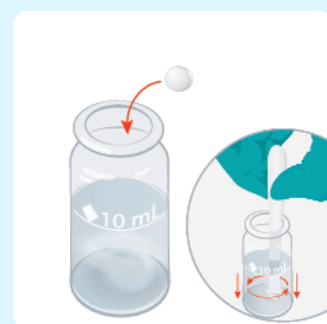
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



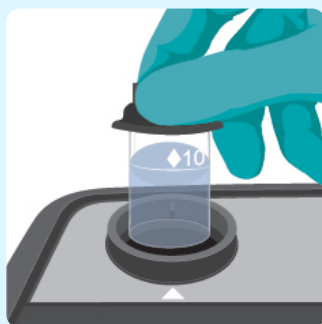
Prepare sample by adding a Silica No1 tablet and crush and stir.

04



Then, add a Silica No 2 tablet and crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 1 minute. The concentration of Silica will then be displayed.

Palintest

Water Analysis Technologies

Silica LR [PO₄]

Photometric test for Silica (low range) in natural, treated and industrial water (corrected for phosphate interference)

COLOUR CHANGE

Colourless to Blue

RANGE:

0 - 4 mg/L SiO₂

TECHNICAL RESOURCE:

Silica LR Test Method, Technical Information

01



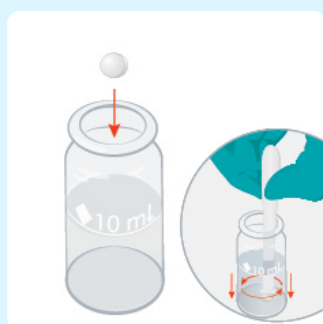
Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



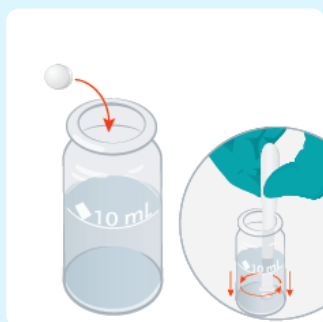
Prepare sample by adding a Silica No1 tablet and crush and stir.

04



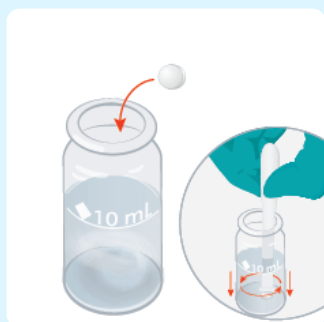
Wait 5 minutes to allow silica to react.

05



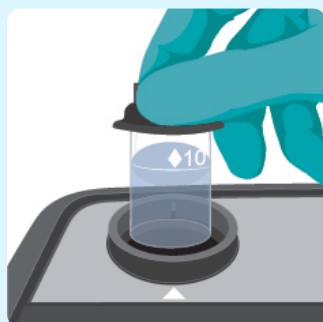
Then, add a Silica PR tablet and crush and stir.

06



Then, add a Silica No 2 tablet and crush and stir.

07



Place in the cell holder and press Measure.

08



Allow timer to count down 1 minute. The concentration of Silica will then be displayed.

Palintest

Water Analysis Technologies

Sulfide	
Photometric test for Sulfide in natural and wastewaters	
COLOUR CHANGE	Pink to Blue
RANGE:	0 - 0.5 mg/L S
TECHNICAL RESOURCE:	Sulfide Test Method, Technical Information

01



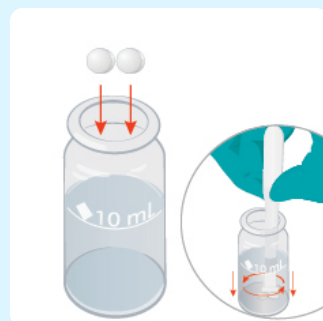
Fill to the 10 mL line with sample.

02



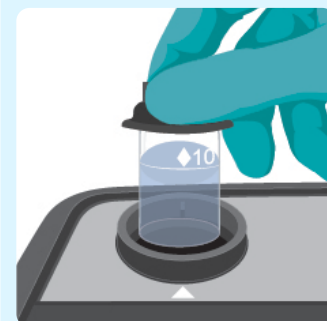
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Prepare sample by adding a Sulfide No 1 and a Sulfide No 2 tablet. Very gently, crush both tablets and stir.

04



Place in the cell holder and press Measure.

05



Allow timer to count down 10 minutes. The concentration of Sulfide will then be displayed.

Palintest

Water Analysis Technologies

Sulfite

Photometric test for Sulfite in treated water

COLOUR CHANGE

Purple to Colourless

RANGE:

0 - 500 mg/L Na_2SO_3

TECHNICAL RESOURCE:

Sulfite Test Method, Technical Information

01



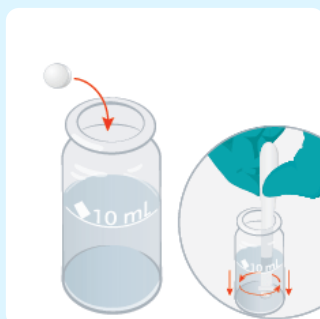
Fill to the 10 mL line with sample.

02



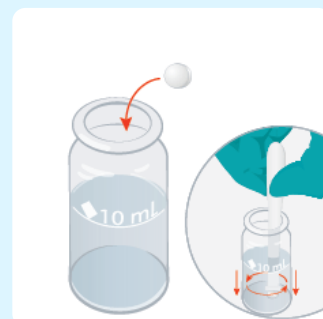
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



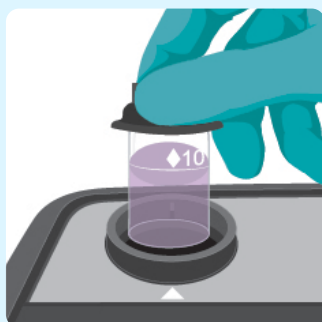
Prepare sample by adding a Sulfitest No1 tablet and crush and stir.

04



Then, add a Sulfitest No2 tablet and crush and stir.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 2 minutes. The concentration of Sulfite will then be displayed.

Palintest

Water Analysis Technologies

Bromine, Total [with Cl_2]

Photometric test for Total Bromine in pool, spa and treated water, with correction if chlorine is also present

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 10 mg/L Br_2

TECHNICAL RESOURCE:

[Bromine Test Method, Technical Information](#)

01



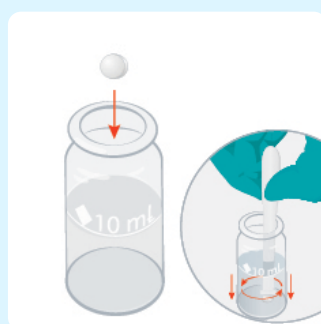
Fill to the 10 mL line with sample.

02



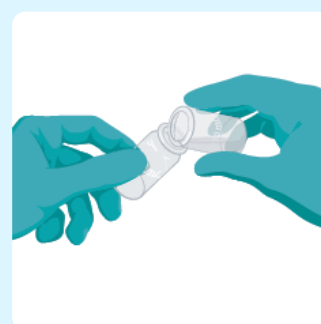
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Add a Glycine tablet and crush and stir.

04



Pour a few drops of this treated sample into another clean tube. Keep the remainder.

05



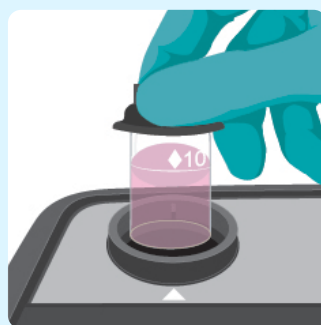
Add a DPD 1 tablet to those drops. Then, crush to form a paste.

06



Pour the remaining treated sample into this tube.

07



Place the tube in the cell holder and press Measure to obtain the concentration of Total Bromine.

www.palintest.com

Palintest

Water Analysis Technologies

Bromine, Total XR

Photometric test for Total Bromine (extended range) in Pools, Spas and treated waters

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 20 mg/L Br₂

TECHNICAL RESOURCE:

[Bromine Test Method, Technical Information](#)

01



Fill to the 10 mL line with sample.

02



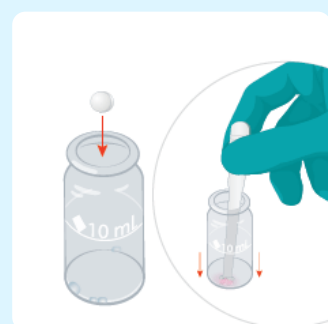
Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Pour out sample leaving a few drops.

04



Add a DPD XF tablet to those drops. Then, crush to form a paste.

05



Fill to the 10 mL line with further sample and stir.

06



Place the tube in the cell holder and press Measure to obtain the concentration of Total Bromine.

Palintest

Water Analysis Technologies

Bromine, Total LR

Photometric test for Total Bromine (low range) in Pools, Spas and treated waters

COLOUR CHANGE

Colourless to Pink

RANGE:

0 - 10 mg/L Br₂

TECHNICAL RESOURCE:

[Bromine Test Method, Technical Information](#)

01



Fill to the 10 mL line with sample.

02



Use this to "blank" the instrument. Place in cell holder and press Blank.

03



Pour out sample leaving a few drops.

04



Add a DPD 1 tablet to those drops. Then, crush to form a paste.

05



Fill to the 10 mL line with further sample and stir.

06



Place the tube in the cell holder and press Measure to obtain the concentration of Total Bromine.

Palintest

Water Analysis Technologies

Hardness – Total

Photometric test for Total Hardness in natural water, treated water and drinking water

COLOUR CHANGE:

Colourless to Purple

RANGE:

0-300mg/L CaCO₃

TECHNICAL RESOURCE:

Total Hardness Test Method, Technical Information

NOTES:

Strongly acidic or alkaline samples should be adjusted to within pH 4 to pH 10 prior to starting the test

01



Fill to the 10 mL line with sample.

02



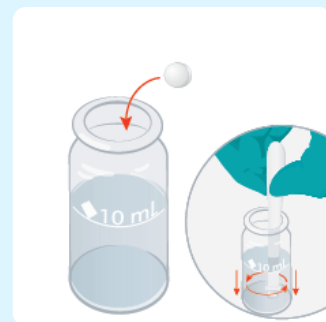
Use this to "blank" the instrument. Place in the cell holder and press Blank.

03



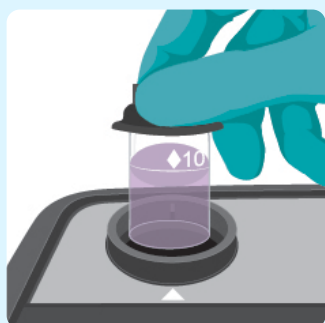
Prepare sample by adding 12 drops of Hardicol liquid buffer and stir.

04



Then, add a Hardicol No2 tablet. Thoroughly crush and stir, until fully dissolved.

05



Place in the cell holder and press Measure.

06



Allow timer to count down 2 minutes. The result for Total Hardness will be displayed.

Palintest

Water Analysis Technologies

Nitrogen, Total/30

Photometric test for Total Nitrogen in natural and waste water

COLOUR CHANGE

Colourless to Yellow

RANGE:

0 - 30 mg/L N

TECHNICAL RESOURCE:

Nitrogen, Total 30N Test Method, Technical Information

NOTES:

Tubetests Nitrate Powder is light sensitive. Keep lid closed when not in use

01



Turn on heater block and set temperature to 105°C. Note: Timer may need setting above zero for warm up to start.

02



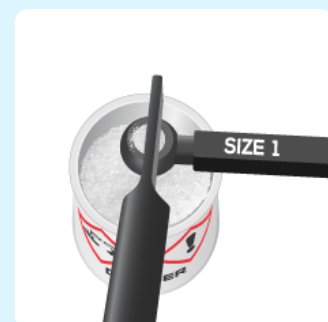
Locate the Reagent No1 pack and equipment. Add THREE SIZE 1 scoopfuls to a Total Nitrogen Tubetest, as follows...

03



Remove screw cap from Tubetest and fit funnel to tube.

04



Take the Size 1 Dosing Scoop and fill it by dipping it in to the powder. Then, draw the scraper across the scoop to ensure a level fill.

05



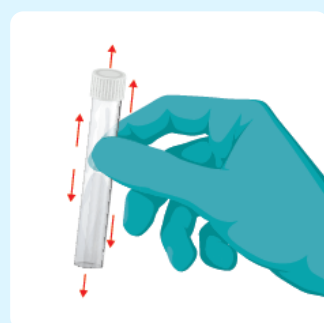
Locate the scoop in the funnel and rotate it so that the powder falls in to the tube. Tap back of scoop. Be sure, to add THREE scoopfuls.

06



Then, add 5 mL of sample using a pipettor.

07



Secure cap and shake vigorously for 30 seconds.

08



Set timer on heater block to 30 minutes.

Test continued on page 2



Nitrogen, Total/30

Photometric test for Total Nitrogen in natural and waste water

COLOUR CHANGE

Colourless to Yellow

RANGE:

0 - 30 mg/L N

TECHNICAL RESOURCE:

Nitrogen, Total 30N Test Method, Technical Information

NOTES:

Tubetests Nitrate Powder is light sensitive. Keep lid closed when not in use

09



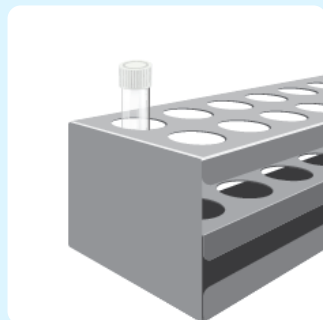
Place the tube in the heating block.

10



Ensure safety screen is in position, and digest tube at 105°C for 30 minutes.

11



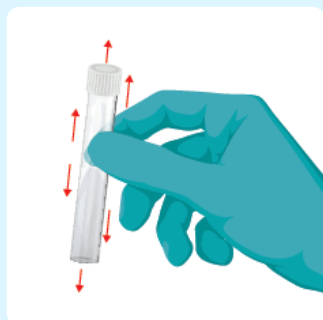
Carefully remove tube and place in a rack to cool.

12



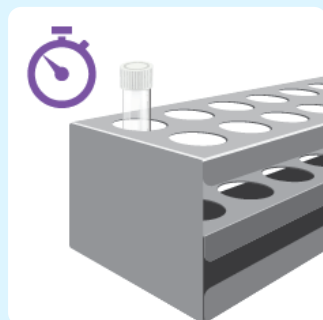
Add ONE level scoop of Total Nitrogen Reagent No2. Using dosing scoop SIZE 4. Warning: sulfur dioxide will be evolved.

13



Secure cap and shake vigorously for 15 seconds.

14



Place back in the rack and leave for 3 minutes.

15



Remove 1 mL from the digested tube and carefully transfer to a Nitrate/30N Tubetest. DO NOT SHAKE.

16



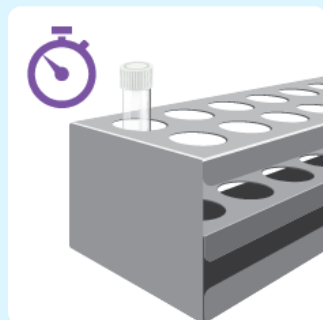
To the same Nitrate/30N tube, add ONE level scoopful of Tubetest Nitrate Powder, using dosing scoop SIZE 1.

17



Ensure cap is fully tightened, then slowly invert tube five times. Warning: Tube will become hot.

18



Place in rack and wait 5 minutes.

19



Fit the Tubetest adapter to Lumiso. Then, "blank" instrument by placing an unused Nitrate/30N Tubetest in the cell holder and pressing Blank.

20



Then, place the Sample tube in the cell holder and press Measure to display the Total Nitrogen concentration.

Palintest

Water Analysis Technologies

Phosphorous, Total/12

Photometric test for Total Phosphorous in natural water and wastewater

COLOUR CHANGE

Colourless to Blue

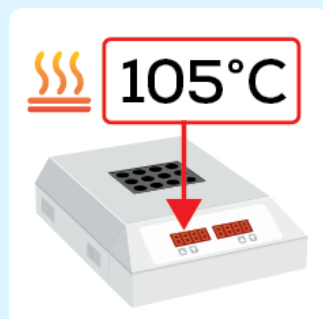
RANGE:

0 - 12 mg/L P

TECHNICAL RESOURCE:

Phosphorous, Total/12 Test Method, Technical Information

01



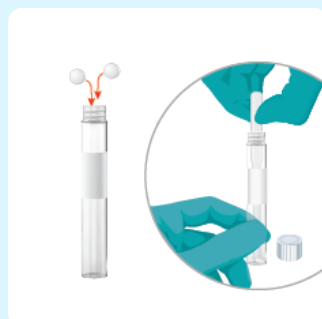
Turn on heater block and set temperature to 105°C. Note: Timer may need setting above zero for warm up to start.

02



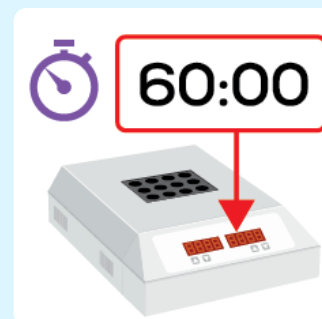
Add 2 mL of sample to a Tubetest.

03



Add two Digest Ox tablets and crush and stir.

04



Set timer on heater block to 60 minutes.

05



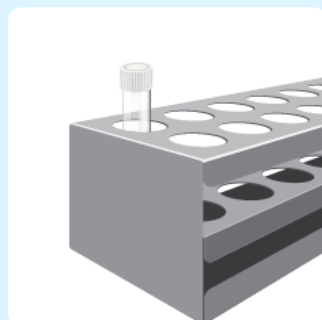
Place the tube in the heating block.

06



Ensure safety screen is in position and allow digestion to take place for 60 minutes.

07



Carefully remove tube and place in a rack to cool.

08



Fit the Tubetest adapter to Lumiso. Then, place an unused Total Phosphorous Tubetest in cell holder and press Blank.

Test continued on page 2



Phosphorous, Total/12

Photometric test for Total Phosphorous in natural water and wastewater

COLOUR CHANGE

Colourless to Blue

RANGE:

0 - 12 mg/L P

TECHNICAL RESOURCE:

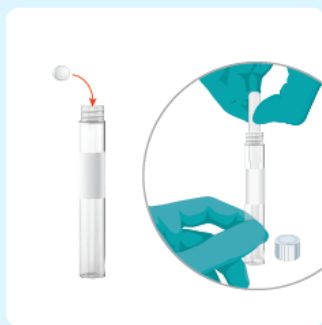
Phosphorous, Total/12 Test Method, Technical Information

09



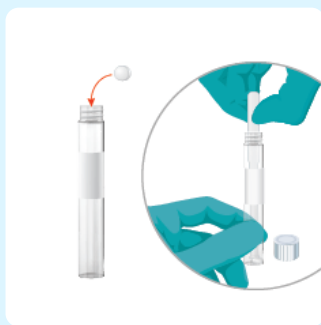
Removed the digested tube from the rack and add 2 mL of PhosNeut Solution.

10



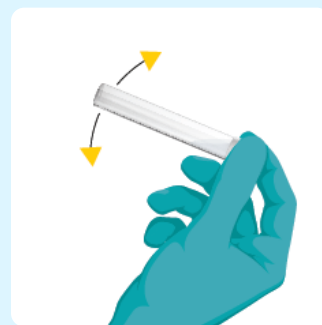
Continue with the same tube by adding a Tubetest Phos No1 tablet. Crush and stir, until fully dissolved.

11



Then, add a Tubetest Phos No2 tablet and crush and stir.

12



Ensure cap is tight, then invert tube a few times to mix.

13



Place in the cell holder and press Measure.

14



Allow timer to count down 10 minutes. The concentration of Total Phosphorous will then be displayed

Palintest

Water Analysis Technologies

Urea	
Photometric test for Urea in swimming pool and spa water	
COLOUR CHANGE	Colourless to Yellow
RANGE:	0 - 500 mg/L $\text{CH}_4\text{N}_2\text{O}$
TECHNICAL RESOURCE:	Urea Test Method, Technical Information

01



Set water bath to 100°C and allow it to reach temperature.

02



Add 10 mL of sample to a clean tube. Note: this test uses a 16 mm diameter tube.

03



Use this to "blank" the instrument. Fit the Tubetest adapter to Lumiso, insert tube and press Blank.

04



To an empty 16 mm tube, add 5 mL of sample.

05



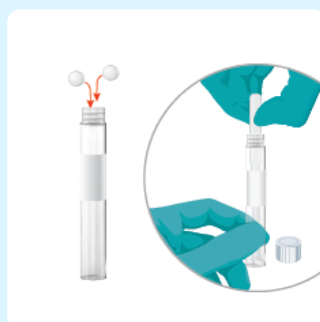
Top up to the 10 mL line with Urea Liquid Reagent.

06



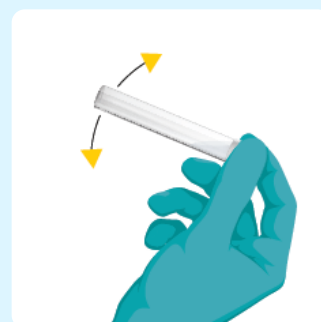
Invert tube gently to mix. Do not shake.

07



Add a Urea No1 tablet and a Urea No2 tablet. Crush both tablets until fully dissolved.

08



Invert tube gently to mix. Do not shake.

Test continued on page 2



Urea

Photometric test for Urea in swimming pool and spa water

COLOUR CHANGE

Colourless to Yellow

RANGE:

0 - 500 mg/L $\text{CH}_4\text{N}_2\text{O}$

TECHNICAL RESOURCE:

Urea Test Method, Technical Information

09



Place in water bath and leave for exactly 30 minutes at 100°C.

10



Carefully remove and dry tube.

11



Without delay, place tube in cell holder and press Measure to obtain the concentration of Urea.