

1 pH Field Test Kit

Properties of pH Field Test Kit

Detection range	pH 3.0 – 9.0
Sample volume	0.5 mL
Analysis time	30 s

Usage For natural water sample such as water from canal.
In case of other samples, prior study should be conducted.

Bottling Drinking Water Quality ♦ Allowable pH range 6.5-8.5

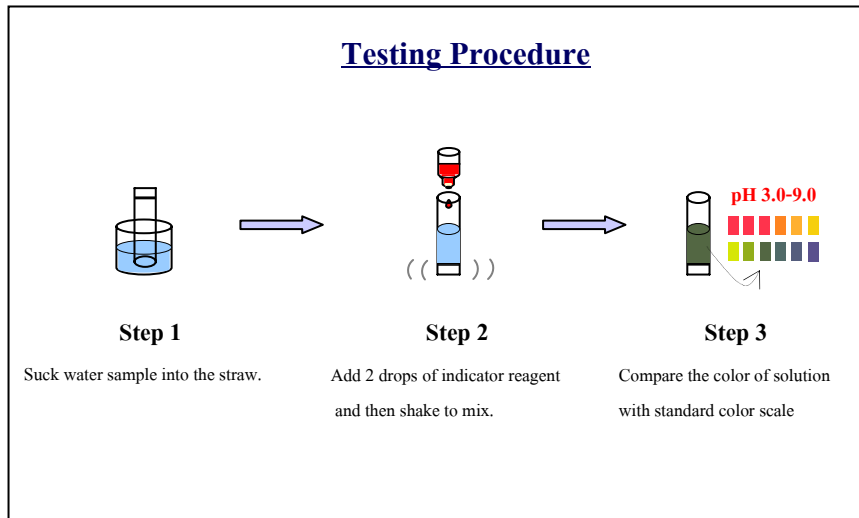
Standards (Notification of the Ministry of Public Health, No.61, B.E.2524)

♦ Maximum Allowable pH not more than 9.2

(Thai Industrial Standards ,1978)

♦ Standard pH 6.5-9.5 (WHO, 2003)

Surface Water Quality Standards pH 5-9 (Notification of the National Environment Board No.8, B.E.2537)



14 Arsenic(III) Field Test Kit

Properties of Arsenic(III) Field Test Kit

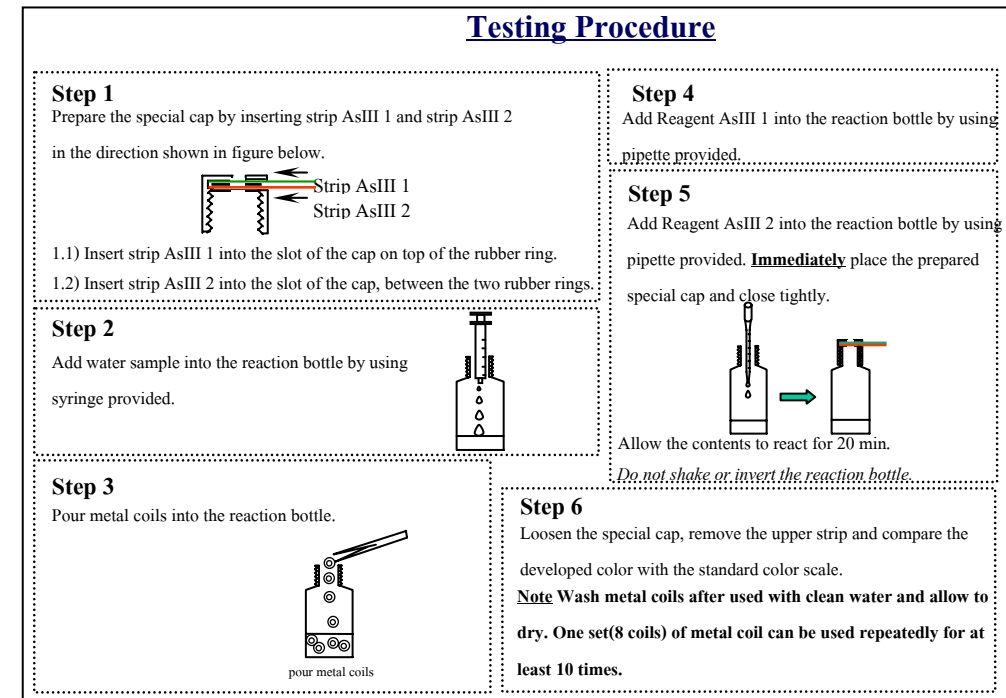
Detection range	5-500 ppb ($\mu\text{g/L}$)
Detection limit	5 ppb ($\mu\text{g/L}$)
Sample volume	20 mL
Analysis time	20 min

Usage For natural water sample such as water from canal.
In case of other samples, prior study should be conducted.

Bottling Drinking Water Quality ♦ None

Standards

Surface Water Quality Standards ♦ None



Arsenic Field Test Kit

Properties of Arsenic Field test Kit

Detection range	5-500 ppb ($\mu\text{g/L}$)
Detection limit	5 ppb ($\mu\text{g/L}$)
Sample volume	20 mL
Analysis time	10 min

Usage For natural water sample such as water from canal.
In case of other samples, prior study should be conducted.

Bottling Drinking Water Quality Standards

- ◆ Maximum Allowable Concentration 0.05 mg/L
(Notification of the Ministry of Public Health, No.61, B.E.2524)

- ◆ Maximum Allowable Concentration 0.05 mg/L
(Thai Industrial Standards ,1978)

- ◆ Standard 0.01 mg/L (WHO, 2003)

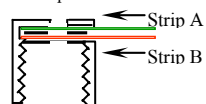
Surface Water Quality Standards

- ◆ 0.01 mg/L(Notification of the National Environment Board No.8, B.E.2537)

Testing Procedure

Step 1 Prepare the special cap

Insert strip A and strip B in the direction shown in figure below.



- 1.1) Insert strip A into the slot of the cap on top of the rubber ring.
- 1.2) Insert strip B into the slot of the cap, between the two rubber rings.

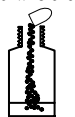
Step 2

Add water sample into the reaction bottle by using syringe provided.



Step 3

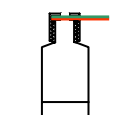
Open one capsule of Z and pour the whole content into the reaction bottle.



pour reagent Z

Step 4

Add reagent A into the reaction bottle by using pasture pipette provided. **Immediately** place the prepared special cap and close tightly.



place the special cap and close tightly

Allow the contents to react for 10 min.

Do not shake or invert the reaction bottle.

Step 5

Loosen the special cap, remove strip A and compare the developed color with the standard color scale.

Dissolved Oxygen Field Test Kit

Properties of Dissolved Oxygen Field Test Kit

Detection range	1-8 ppm (mg/L)
Detection limit	1 ppm (mg/L)
Sample volume	10 mL
Analysis time	1 Min

Usage For natural water sample

Surface Water Quality Standards 2-6 mg/L
(Notification of the National Environment Board No.8, B.E.2537)

Testing Procedure

- (1) Make volume of water sample to the scale bar.
- (2) Add Do1 and Do2 reagents.
- (3) Make volume of water sample to the scale bar.
- (4) Close the hole and shake for 1 min.
- (5) Make volume of water sample to the scale bar and add Do3 reagent.
- (6) Make volume of water sample to the scale bar.
- (7) Close the hole and shake until a clear solution is obtained.
- (8) Transfer the solution to the glass bottle then compare with color scale.

3 Total Coliform Bacteria Field Test Kit

Properties of Total Coliform Bacteria Field Test Kit

Detection range	300-22,000 MPN / 100 mL water
Detection limit	300MPN / 100 mL water
Sample volume	10 mL
Analysis time	24 h

Usage	For natural water sample
Bottling Drinking Water Quality Standards	<ul style="list-style-type: none"> ◆ Maximum Allowable Concentration 2.2 MPN/ 100 mL water (Notification of the Ministry of Public Health, No.61, B.E.2524) ◆ Maximum Allowable Concentration <2.2 MPN/ 100 mL water (Thai Industrial Standards ,1978) ◆ Standard 0 MPN /100 mL water (WHO, 2003)
Surface Water Quality Standards	5,000-20,000 MPN /100 mL water (Notification of the National Environment Board No.8, B.E.2537)

Testing Procedure

Step 1 Moisten cotton with alcohol

Step 2 Prepare water sample

Step 3 Follow the figures bellow

▪ Take aluminium cock and cotton out

▪ Add water sample

▪ Place cotton in bottle and allow the contents to react for 24 h



12 Lead Field Test Kit

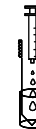
Properties of Lead Field test Kit

Detection range	40-200 or 20-100 ppb (µg/L)
Detection limit	20 ppb (µg/L)
Sample volume	20 or 40 mL
Analysis time	2 min

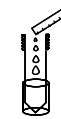
Usage	For water quality detection
Bottling Drinking Water Quality Standards	<ul style="list-style-type: none"> ◆ Maximum Allowable Concentration 0.05 mg/L (Notification of the Ministry of Public Health, No.61, B.E.2524) ◆ Maximum Allowable Concentration 0.05 mg/L (Thai Industrial Standards, 1978) ◆ Standard 1.5 mg/L (WHO, 2003)
Surface Water Quality Standards	0.05 mg/L (Notification of the National Environment Board No.8, B.E.2537)

Testing Procedure

Step 1 Add water sample



Step 2 Add reagent M



Step 3 Prepare solution D. pour S into vial D, cap the vial and mix thoroughly to obtain solution D



Step 4 Extraction step. pour solution D into extraction bottle, cap the extraction bottle and shake vigorously



Step 5 Reading concentration value

Color scale					
µg of Lead	0	0.8	2.0	3.8	6.0
µg of Lead in sample (Vol. 10 mL)	0	80	100	140	200
µg of Lead in sample (Vol. 40 mL)	0	20	50	70	100

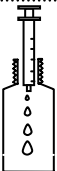
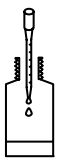
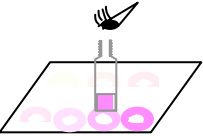

Step 6 Add detoxifying agent before wasting

11 Manganese Field Test Kit

Properties of Manganese Field test Kit

Detection range	0.25-6 ppm (mg/L)
Detection limit	0.25 ppm (mg/L)
Sample volume	5 mL
Analysis time	5 min
Usage	For water quality detection
Bottling Drinking Water Quality Standards	<ul style="list-style-type: none"> ◆ Maximum Allowable Concentration 0.05 mg/L (Notification of the Ministry of Public Health, No.61, B.E.2524) ◆ Maximum Allowable Concentration 0.5 mg/L (Thai Industrial Standards ,1978) ◆ Standard 0.4 mg/L (WHO, 2003)
Surface Water Quality Standards	1.0 mg/L (Notification of the National Environment Board No.8, B.E.2537)

Testing Procedure

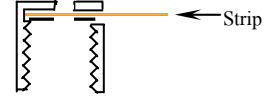
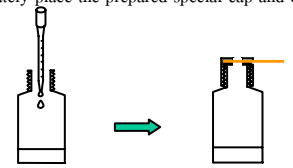
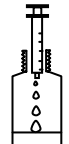
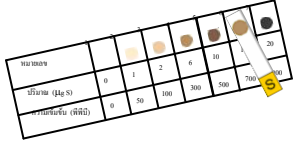
<p>Step 1</p> <p>Add water sample into the reaction bottle using the syringe provided.</p> 	<p>Step 4</p> <p>Shake the mixture and allow the contents to react for 10 min.</p>
<p>Step 2</p> <p>Add Solution Mn1 into the reaction bottle using the pipette provided.</p> 	<p>Step 5</p> <p>Compare the color of the solution with Standard Color Scale by placing the uncapped reaction bottle at the center of color ring to match the color of the solution and the ring.</p> 
<p>Step 3</p> <p>Add Reagent Mn2 into the reaction bottle.</p> 	

4 Sulfide Field Test Kit

Properties of Sulfide Field Test Kit

Detection range	50-1,000 ppb (µg/L)
Detection limit	50 ppb (µg/L)
Sample volume	20 mL
Analysis time	10 min
Usage	For water quality detection
Bottling Drinking Water Quality Standards	◆ None
Surface Water Quality Standards	◆ None

Testing Procedure

<p>Step 1 Prepare the special cap by insert strip L into the slot of the cap on top of the rubber ring, in the direction shown in figure below.</p> 	<p>Step 3</p> <p>Add reagent C into the reaction bottle by using pasture pipette provided. Immediately place the prepared special cap and close tightly.</p>  <p>add reagent C → place the special cap and close tightly</p> <p>Swirl to mix, allow the contents to react for 10 min. <i>Do not shake or invert the reaction bottle.</i></p>
<p>Step 2</p> <p>Add water sample into the reaction bottle by using syringe provided.</p> 	<p>Step 4</p> <p>Loosen the special cap, remove strip S and compare the developed color with the standard color scale.</p> 

5 Nitrate Field Test Kit

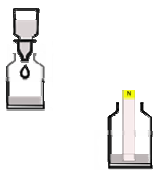
Properties of Nitrate Field Test Kit

Detection range	0.5 -50 ppm-N(mg-N/L)
Detection limit	0.5 ppm-N(mg-N/L)
Sample volume	2.5 mL
Analysis time	2-3 min
Usage	For natural water sample such as water from canal. In case of other samples, prior study should be conducted.
Bottling Drinking Water Quality Standards	<ul style="list-style-type: none"> ◆ Maximum Allowable Concentration 4.0 mg-N/L (Notification of the Ministry of Public Health, No.61, B.E.2524) ◆ Maximum Allowable Concentration 45 mg-N/L (Thai Industrial Standards ,1978) ◆ Standard 50 mg-N/L (WHO, 2003)
Surface Water Quality Standards	◆5.0 mg-N/L (Notification of the National Environment Board No.8, B.E.2537)

Testing Procedure

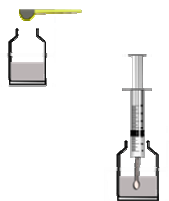
Step 1 Nitrite Determination

- Add water sample into the reaction bottle1 with syringe 1ml-contained-syringe
- Add reagent N2 and swirl gently to mix the solution
- Immerse the strip N into the solution
- Compare the developed colour with the standard colour scale and note down the obtained concentration of nitrite



Step 2 Nitrate Determination

- Add water sample into the reaction bottle2 with 3 ml-contained-syringe
- Add reagent N1 and swirl to mix for 1 minute
- Suck the solution with attachable-cotton bud-syringe
- Remove the cotton bud and transfer the solution into the reaction bottle3
- Continue the procedure as in nitrite determination



Step 3 Nitrate Correction

$$\text{NO}_3^- = \text{NO}_3^- \text{ read from colour scale} - (\text{NO}_2^- \text{ read from colour scale} \times 50)$$

10 Iron Field Test Kit

Properties of Iron Field Test Kit

Detection range	0.1-4 ppm (mg/L)
Detection limit	0.1 ppm (mg/L)
Sample volume	5 mL
Analysis time	10 min
Usage	For water quality detection
Bottling Drinking Water Quality Standards	<ul style="list-style-type: none"> ◆ Maximum Allowable Concentration 0.3 mg/L (Notification of the Ministry of Public Health, No.61, B.E.2524) ◆ Maximum Allowable Concentration 1.0 mg/L (Thai Industrial Standards ,1978) ◆ None (WHO, 2003)

Testing Procedure

Step 1

Add water sample into the reaction bottle to the level of the black line.



Step 4

Add 10 drops of **Solution Fe3** and 5 drops of **Solution Fe4** into the reaction bottle.

Step 5

Cap the reaction bottle tightly. Swirl to mix and allow the contents to react for 10 min.

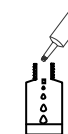
Step 6

Uncap and compare the developed color with the standard color scale by placing the uncapped reaction bottle at the center of color ring to match the color of the solution and the ring.



Step 2

Carefully open the screw cap of **solution Fe1** bottle. Add 4 drops of **Solution Fe1** into the reaction bottle. Swirl to mix.



Step 3

Add **Reagent Fe2** into the reaction bottle. Swirl to dissolve and wait for 5 minutes.



Ammonia Field Test Kit

Properties of Ammonia Field Test Kit

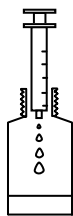
Detection range	0.5-6.0 or 1-12 or 5-60 mg-N/L
Detection limit	0.5 mg-N/L
Sample volume	10 mL
Analysis time	20 min

Usage	For natural water sample such as water from canal or ammonia-contaminated water. Need to apply for other samples. Should be study before.
Surface Water Quality Standards	0.5 mg-N/L (Notification of the National Environment Board No.8, B.E.2537)
Effluent Standards for Coastal Aquaculture	Not more than 1.1 mg-N/L (Notification of the National Environment Board No.8, B.E.2537)

Testing Procedure

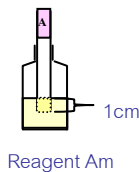
Step 1

Add water sample into the reaction bottle using the syringe provided. Make up volume with water free from ammonium N.



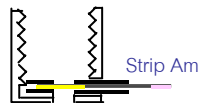
Step 2

Immerse strip Am into Reagent Am. Allow the reagent to be absorbed in the paper strip to about 1 cm in height



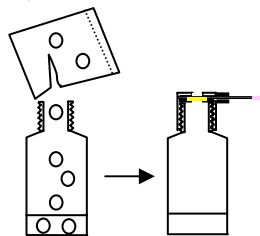
Step 3

Insert the strip Am into the slot of the cap, between the two rubber rings, as shown.



Step 4

Tear 1 pack of sodium hydroxide and quickly pour the whole content into the reaction bottle. Immediately close the prepared cap tightly. Swirl the bottle gently until sodium hydroxide dissolves (about 1min). Stand for 15 min.



Step 5

Loosen the special cap to remove the strip Am and compare the developed color with the standard color scale.

Nitrite Field Test Kit

Properties of Nitrite Field Test Kit

Detection range	0.01-2.0 ppm-N (mg-N/L)
Detection limit	0.01 ppm-N (mg-N/L)
Sample volume	1 mL
Analysis time	1 min

Usage	For natural water sample such as water from canal, or nitrite-contaminated water. In case of other samples, prior study should be conducted.
Bottling Drinking Water Quality Standards	Standard 3 mg-NO ₂ ⁻ /L for short-term exposure and Standard 0.2 mg-NO ₂ ⁻ /L for short-term exposure (WHO, 2003)

Testing Procedure

Step 1 Suck water sample with syringe



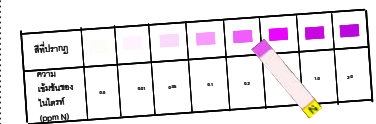
Step 2 Drop N1 reagent



Step 3 Soak N2-paper in mixtures and take out immediately



Step 4 Compare with standard color



Phosphate Field Test Kit

Properties of Phosphate Field Test Kit

Detection range	0.025-3 ppm-P (mg-P/L)
Detection limit	0.025 ppm-P (mg-P/L)
Sample volume	10 mL
Analysis time	1 min

Usage For natural water sample such as water from canal.
In case of other samples, prior study should be conducted.

Bottling Drinking Water Quality ♦ None

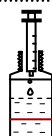
Standards

Surface Water Quality Standards ♦ None

Testing Procedure

Step 1

Add 10 mL of the water sample into the reaction bottle up to black mark using



Step 2

Add 2 drops of reagent P1 into the reaction bottle.



Step 3

Add 1 drop of reagent P2 into the reaction bottle. Close the bottle with the cap and shake to mix.

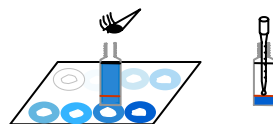


Compare the resulting color with standard color scale (within 1min.)

Step 4

Open the cap and place the bottle in a middle of standard color rings. Choose the ring that the color of the solution matches that of the ring.

In case the resulting value is equal or more than 1.0 ppm-P, pour away some of the solution to reach the red mark. Compare the color again and multiple the obtained value with 5.



Fluoride Field Test Kit

Properties of Fluoride Field Test Kit

Detection range	0.2-3 ppm (mg/L)
Detection limit	0.2 ppm (mg/L)
Sample volume	2 mL
Analysis time	10 min

Usage Fatural water sample such as water from canal.
In case of other samples, prior study should be conducted.

Bottling Drinking Water Quality ♦ Maximum Allowable Concentration 1.5 mg/L

Standards

(Notification of the Ministry of Public Health, No.61, B.E.2524)

♦ Maximum Allowable Concentration 1.0 mg/L

(Thai Industrial Standards,1978)

♦ Standard 1.5 mg/L (WHO, 2003)

Testing Procedure

Step 1

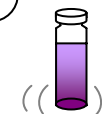
Fill water sample into the test bottle to the mark* and cap the reaction bottle.

*Note: The plastic pipet might be used.



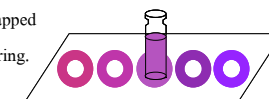
Step 2

Shake the test bottle to mix water with the reagents for 1 min, and allow the contents to react for 10 min and shake once again.



Step 3

Compare the color of the solution with Standard Color Scale by placing the uncapped reaction bottle at the center of color ring to match the color of the solution and the ring.



Mercury Field Test Kit

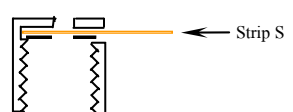
Contents

Properties of Mercury Field Test Kit

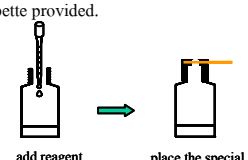
Detection range	5-500 ppb ($\mu\text{g/L}$)
Detection limit	5 ppb ($\mu\text{g/L}$)
Sample volume	10 mL
Analysis time	20 min
Usage	Fatural water sample such as water from canal. In case of other samples, prior study should be conducted.
Bottling Drinking Water Quality Standards	<ul style="list-style-type: none"> ◆ Maximum Allowable Concentration 0.002 mg/L (Notification of the Ministry of Public Health, No.61, B.E.2524) ◆ Maximum Allowable Concentration 0.001 mg/L (Thai Industrial Standards ,1978) ◆ Standard 0.001 mg/L(WHO, 2003)
Surface Water Quality Standards	0.002 mg/L (Notification of the National Environment Board No.8, B.E.2537)

Testing Procedure

Step 1 Prepare the special cap by Insert strip S into the slot of the cap on top of the ring, in the direction shown in figure below.



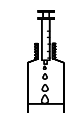
Step 3 Add reagent into the reaction bottle by using rubber pasture pipette provided.



add reagent place the special cap and close tightly

Immediately place the prepared special cap and close tightly.
Swirl to mix, allow the contents to react for 20 min.

Step 2 Add water sample into the reaction bottle by using syringe provided.



Step 4 Loosen the special cap, remove strip S and compare the developed color with the standard color scale.

pH	1
Dissolved Oxygen (DO)	2
Total Coliform Bacteria	3
Sulfide (S^{2-})	4
Nitrate(NO_3^- -N)	5
Nitrite (NO_2^- - N)	6
Phosphate (PO_4^{3-} - P)	7
Fluoride (F^-)	8
Ammonia (NH_4^+ -N)	9
Iron (Fe)	10
Manganese (Mn)	11
Lead (Pb)	12
Arsenic (As)	13
Arsenic III (As III)	14
Mercury (Hg)	15