

COMBI KIT
AE 104

R. O. WATER



AQUASOL

Any time ... Any where...



Analyzing Waters

Analyzing Waters

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Anytime... Anywhere...

COMBI KIT BOILER WATER - LL



- ◆ **AQUASOL** systems are extremely convenient, and free you from the tedium of the laboratory, while saving precious time. Now you do not have to bother about reagent preparations and standardization.
- ◆ **AQUASOL** gives you freedom from the need of a laboratory, trained manpower and laborious processes involved
- ◆ Simple, easy to follow procedures, **Anytime... Anywhere...**
- ◆ Based on proven laboratory methods backed by sound chemical research
- ◆ Rapid, accurate and reliable results are achieved
- ◆ Low cost, user friendly, compact and portable systems

Reverse Osmosis (RO) is a modern process to purify water for a wide range of applications, including semiconductors, boiler feed water treatment, food processing, biotechnology, pharmaceuticals, power generation, seawater desalting, and municipal drinking water.

It is important to check chemical and physical parameters of RO water for proper functioning of the RO plant.

AQUASOL AE 104 is specially designed for R O Water Analysis.



R. O. Water Analysis AE 104



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pH

AE : 306



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Colour Comparison Method

Directions for Use :

- 1) Fill the test jar with the water sample upto 10 ml mark.
- 2) Add 10 drops of **pH 1** and mix well.
- 3) Compare the colour developed with the colour chart by placing the test jar near the colour. View the sample colour from the top of the jar while matching with the colour chart.
- 4) Read the pH.

* For controlled addition of drops, follow instruction on the dispenser

TOTAL HARDNESS

AE : 201



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Range : 10–200, ppm Hardness as ppm CaCO₃

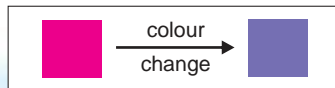
Directions for Use :

1. Take 25 ml of water sample to be tested in the test jar.
 2. Add one spoonful (provided herewith) of **TH 1S**.
 3. Mix contents well to dissolve.
 4. Add 10-12 drops* of **TH 2** and mix contents well.
 5. If colour turns blue, it indicates there is 'No Hardness' in the water.
 6. If colour turns red, it indicates there is 'Hardness'.
 7. Now drop wise* add **TH 3**[♦], counting the number of drops while mixing, until the colour changes from red to blue.
- ♦ If the expected hardness of the test sample is more than 40 ppm, then use **TH 4** instead of **TH 3**.

Calculations :

$$\begin{aligned}\text{Total Hardness as ppm CaCO}_3 &= 2 \times (\text{No. of drops of TH 3}) \\ &= 5 \times (\text{No. of drops of TH 4})\end{aligned}$$

* For controlled addition of drops, follow instructions on the dispenser.



SILICA

AE : 302



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Colour Comparison Method

Range : 5,10, 20, 40, 60, 80 ppm Silica as SiO₂

Directions for Use :

1. Take 5 ml. of prepared* sample in plastic test jar using syringe.
2. Add in a rapid succession 3 drops of **SL 1** and 6 drops of **SL 2**
3. Mix the contents thoroughly. Keep for 5 minutes.
4. Now Add 6 drops of **SL 3** and mix thoroughly. Wait for 2 minutes.
5. Transfer the contents in small comparator tube provided here.
6. Read the ppm Silica as follows:
 - a) Place the comparator tube on the small inner (white) circle, on the colour comparison chart.
 - b) View from the top of the comparator tube to compare the sample colour and the colour around.
 - c) Match the colours by moving the tube from one circle to another.
 - d) Read the ppm SILICA after arriving at the correct match.

Preparation of sample

The pH of water should be preferably neutral. Therefore neutralize highly acidic or alkaline sample to pH 6.5 to 7.5.

* For controlled addition of drops, follow instruction on the dispenser

SULPHATE

AE : 209



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Range : 10–200 & 50–1000 mg/l as Sulphate

Directions for use :

1. Take 2 ml sample in Test jar with the help of syringe (provided herewith)
2. Dilute with Alcohol (Ethanol/Methanol/Isopopropanol) (AR/GR) up to the 10 ml mark. Mix well.

Note: Since the Alcohol is inflammable in nature, it is not provided with the test kit.

3. Add one spoonful of **NSP 2**. Mix well.
4. Now drop wise add **NSP 3** counting the number of drops while mixing until the yellow colour change to saffron red.

If the expected Sulphate content of the sample is more than 200 ppm, then use **NSP 4** instead of **NSP 3**.

Conclusion :

Sulphate as ppm $\text{SO}_4 = 10 \times$ (No. of drops of **NSP 3**)

Sulphate as ppm $\text{SO}_4 = 50 \times$ (No. of drops of **NSP 4**)

* For controlled addition of drops, follow instructions on the dispenser.

SILICA

AE : 302



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Colour Comparison Method

Range : 5, 10, 20, 40, 60, 80 ppm Silica as SiO_2

Directions for Use :

1. Take 5 ml. of prepared* sample in plastic test jar using syringe.
2. Add in a rapid succession 3 drops of **SL 1** and 6 drops of **SL 2**
3. Mix the contents thoroughly. Keep for 5 minutes.
4. Now Add 6 drops of **SL 3** and mix thoroughly. Wait for 2 minutes.
5. Transfer the contents in small comparator tube provided here.
6. Read the ppm Silica as follows:
 - a) Place the comparator tube on the small inner (white) circle, on the colour comparison chart.
 - b) View from the top of the comparator tube to compare the sample colour and the colour around.
 - c) Match the colours by moving the tube from one circle to another.
 - d) Read the ppm SILICA after arriving at the correct match.

Preparation of sample

The pH of water should be preferably neutral. Therefore neutralize highly acidic or alkaline sample to pH 6.5 to 7.5.

* For controlled addition of drops, follow instruction on the dispenser

IRON

AE : 303



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Colour Comparison Method

Range 0, 0.05, 0.1, 0.3, 0.4, 0.5, 0.7, 1.0, 1.5, 2.0 ppm Iron as Fe

Directions for Use :

1. Take 5 ml of water sample to be tested in a test jar.
2. Add 15 drops of **FE1** and 30 drops of **FE2**
3. Mix the contents thoroughly.
4. Add one spoonful (provided herewith) of **FE3** and mix the contents thoroughly by swirling the test jar and let the mixture stand for 10 minutes.
5. Transfer the content in small comparator tube provided here.
6. Read the ppm Iron as follows:
 - a) Place the comparator tube on the small inner (white) circle, on the colour comparison chart.
 - b) View from the top of the comparator tube to compare the sample colour and the colour around.
 - c) Match the colours by moving the tube from one circle to another.
 - d) Read the ppm IRON after arriving at the correct match.

- Note:**
- Sample pH should be preferably neutral. If a sample is acidic or alkaline it should be neutralized before test.
 - In case of water sample having colour tint, do the following:
 1. Take the original water sample in the comparator tube and read the ppm IRON as per the procedure in No. 6 above.
 2. This ppm reading has to be subtracted from the reading of the tested sample.

* For controlled addition of drops, follow instruction on the dispenser

NITRITE

AE : 217



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Range : 0.05 – 0.8 mg/l as NO₂

Directions for Use :

1. Fill a test tube up to the 10 ml mark with the water to be tested.
2. Add 3 drops of **NL 1**. Mix and allow to wait for 2 minutes.
3. Add **NL 2** one spoon, shake to dissolve, wait for 10 minutes. A pink colour in the tube indicates presence of Nitrite. Dilute it upto 25ml mark.
4. Transfer the content in small comparator tube provided here.
5. Read the ppm nitrite as follows:
 - a) Place the comparator tube on the small inner (white) circle, on the colour comparison chart.
 - b) View from the top of the comparator tube to compare the sample colour and the colour around.
 - c) Match the colours by moving the tube from one circle to another.
 - d) Read the ppm NITRITE after arriving at the correct match.

* For controlled addition of drops, follow instruction on the dispenser

NITRATE

AE : 308



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Colour Comparison Method

Range : 1.0, 2.5, 5, 7.5, 10, 20, 30, 40, 50 ppm as NO₃

Directions for Use :

1. Take 5 ml of sample in the test tube provided.
2. Now add one spoonful of **HNT1**, shake well. Keep for 10 minutes, while shaking intermittently.
3. To this now add three drops* of **HNT2**. Mix well. Keep for three minutes, while shaking intermittently.
4. Now add one spoonful of **HNT3**. Shake well. Wait for 5 minutes to allow maximum colour development Dilute to 25 ml mark with DM water.
5. Transfer the content in small comparator tube provided here.
6. Read the ppm Nitrate as follows :
 - a) Place the comparator tube on the small inner (white) circle, on the colour comparison chart.
 - b) View from the top of the comparator tube to compare the sample colour and the colour around.
 - c) Match the colours by moving the tube from one circle to another.
 - d) Read the ppm NITRATE after arriving at the correct match.

* For controlled addition of drops, follow instruction on the dispenser



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An
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