

# AQUASOL

Analyzing Waters... Anytime... Anywhere...

🌊 **EASY TO FOLLOW PROCEDURES**

🌊 **COMPACT**

🌊 **PORTABLE**

🌊 **BASED ON PROVEN METHODS**

🌊 **ACCURATE**

🌊 **BACKED BY SOUND CHEMICAL RESEARCH**

🌊 **ECONOMICAL**

🌊 **RAPID**

🌊 **RELIABLE**

**AE 109**  
**CONSTRUCTION WATER TEST KIT**



[www.rakiro.net](http://www.rakiro.net)

## CONSTRUCTION WATER TEST KIT

AE 109

Water is one of the most important component in construction and is required for the preparation of mortar, mixing of cement concrete and for curing work etc. The quality of water used has a direct impact on the strength of the mortar and cement concrete in the construction work. Impurities in water can cause metal corrosion, introduce unwanted silt and clay into the concrete, adversely affect the hardening process of concrete and also reduce the strength by even 25%. Thus the need to ensure the quality of water used during construction is vital.

AQUASOL AE 109 is specially designed for Construction Water Analysis.

# CONSTRUCTION WATER TEST KIT

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7. Total dissolved solid .....	Refer AM-P-EC/TDS Impact Leaflet

## CALCIUM HARDNESS

Range : 25 – 500 PPM as  $\text{CaCO}_3$

### Directions for use :

1. Take 10 ml of water sample to be tested in the test jar.
2. Add one spoonful (provided herewith) of **CH2**.
3. Mix well to dissolve.
4. Then add 10 drops of **CH1**.
5. Now drop wise\* add **TH5** counting the number of drops while mixing until the colour changes from red to violet.

### Calculations :

Calcium Hardness as ppm  $\text{CaCO}_3$  = 25 X (No. of drops of **TH5**)

# CHLORIDE

Range : 10 – 200 PPM, 50 – 1000 PPM and upto 2000 PPM as Cl

## Directions for use :

1. Take 10 ml. of water sample to be tested in the test jar.
2. Add one spoonful (provided herewith) of **CD1**.
3. Mix well to dissolve.
4. Then add **CD2** drop by drop till the sample turns yellow.
5. Now drop wise\* add **CD3#**, counting the number of drops while mixing, until the colour changes from yellow to bluish violet.

# If the expected chloride of the sample is more than 200 ppm, then use **CD4** instead of **CD3**.

## Calculations :

$$\begin{aligned}\text{Chloride as ppm Cl} &= 10 \times (\text{Number of drops of } \mathbf{CD3}) \\ &= 50 \times (\text{Number of drops of } \mathbf{CD4})\end{aligned}$$

## For Chloride content more than 1000 ppm do the following:

1. Take 5 ml of water sample to be tested in the test jar. Add 5 ml of DM water (free from chloride) and mix.
2. Carry out the test as above using **CD4** as a titrant.

## Calculation:

$$\text{Chloride as ppm Cl} = 100 \times \text{Number of drops of } \mathbf{CD4}.$$

# SULPHATE

Range : 10 – 200 PPM as SO<sub>4</sub>

## Directions for use :

1. Take 2 ml sample in Test jar with the help of syringe (provided herewith)
2. Dilute with Alcohol (Isopropyl alcohol AR/GR grade) 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 **NSP2**. Mix well.
4. Now drop wise add **NSP3** counting the number of drops while mixing until the yellow colour change to saffron red.

## Calculations :

Sulphate as ppm SO<sub>4</sub> = 10 x (No. of drops of **NSP3**)

# ALKALINITY

Range : 10–200 PPM, 50–1000 PPM as CaCO<sub>3</sub>

## Directions for use :

1. Take 10 ml of water sample in the test jar. Add 2 drops of **AK1**. Mix well. If a pink colour does not appear, this indicates P Alkalinity is nil. Then proceed to step No. 4.
2. If a pink colour appears, this indicates presence P Alkalinity
3. Then drop wise\* add **AK2** counting the number of drops while mixing until the pink colour disappears (N drops).
4. To this solution add one spoonful (provided herewith) of **AK4**. The sample will turn green.
5. Now drop wise\* add **AK2#** counting the number of drops while mixing. Until the colour changes from green to reddish violet (**N1** drops).

# if the expected Alkalinity is more than 200 ppm, then use **AK3L** instead of **AK2**.

## Calculations :

P Alkalinity ppm as CaCO<sub>3</sub> = 10 X (N of Drops of **AK2**)

M or Total Alkalinity ppm as CaCO<sub>3</sub> = 10 X (N + N 1 drops of **AK2**)

P Alkalinity ppm as CaCO<sub>3</sub> = 50 X (N drops of **AK3L**)

M or Total Alkalinity ppm as CaCO<sub>3</sub> = 50 X (N + N 1 drops of **AK3L**)

## ACIDITY

RANGE : 10 – 200 PPM, 50 – 1000 PPM as CaCO<sub>3</sub>

### Directions for use :

1. Take 10 ml of water sample to be tested in the test jar.
2. Add 2 drops of **AK1** mix well to dissolve.
3. Now drop wise add **AC2** # counting the number of drops while mixing until the colour changes from colourless to pink.

\* If the expected Acidity is more than 200 ppm, then use AC 4 instead of AC 2.

### Calculations :

$$\begin{aligned}\text{Total Acidity ppm as CaCO}_3 &= 10 \times (\text{Number of Drops of } \mathbf{AC2}) \\ &= 50 \times (\text{Number of Drops of } \mathbf{AC4})\end{aligned}$$



AQUASOL Systems are available for almost all water parameters in individual packs as well as combination packs depending on the specific requirements of different industries, such as, 'Boiler Water', 'Cooling Water', 'Construction Industry', 'Swimming Pools', 'R.O. Water', etc.

Also for any specific requirements, Custom Made AQUASOL Systems can be devised both as Individual or Combination Kits.

## Aquasol Combi Kits : Application in Different Water Systems

Water Systems	Industries	Applications	Parameters
<b>Boiler</b>	Pulp & Paper, Textile, Steel, Chemical Manufacturing Units, Fertilizers, Refineries, Sugar, Thermal Power, Feed Water,	Raw Water, Softener, Blowdown Water,	Total Hardness, Calcium Hardness, Alkalinity, pH, Silica, Phosphate, Tannin, Iron, Chloride, Sulphite,
<b>Cooling Systems</b>	Pulp & Paper, Textile, Steel, , Chemical Manufacturing Units, Fertilizers, Sugar, Refineries, Thermal Power Stations, Engineering Units	Make-up Water, Recirculating Water, Basin Water	Total Hardness, pH, Chloride, Alkalinity, Calcium Hardness, Silica, Free Chlorine, Nitrite, Phosphate/Phosphonate, Zinc, Molybdate
<b>RO Water</b>	Industries having Reverse Osmosis (RO) Plants	Feed Water and Permeate Water	pH, Total Hardness, Calcium Hardness Silica, Sulphate, Iron (Low Level), Nitrate, Nitrite (Low Level)
<b>Swimming Pool</b>	Hotels & Resorts, Houses	Monitoring of Pool Water	pH, Free Chlorine
<b>Metal Working Fluid</b>	Engineering Units	Process / D. M. Water	Total Hardness, Chloride, pH
<b>Potable Water</b>	Universal	Drinking Water	Total Hardness, Alkalinity, Chloride, Fluoride, Sulphate, Calcium Hardness, Nitrite, Nitrate, Free Chlorine, pH
<b>Purified Water</b>	Pharmaceuticals	Purified Water	Acidity, Alkalinity (pH), Calcium, Chloride Magnesium, Ammonium, Sulphate, Heavy Metal as Pb,
<b>Aqua Culture</b>	Fishery	Ponds	pH, Ammonia, Nitrite, Nitrate