AQUASOL Combination Kit

The Aquasol® combination kit is available in one single pack for multiple parameters. Therefore in one single pack various parameters can be analyzed increasing the convenience and Portability.

Aquasol® Combination Kits are available for almost all water parameters as given below:

COOLING WATER SYSTEMS (PRODUCT CODE: AE 101)

Water is required to be cooled for many processes, for example air conditioners, manufacturing processes or power generation, etc. A cooling tower is used to reduce the temperature of a water stream by extracting heat from water and emitting it to the atmosphere. Cooling towers make use of evaporation whereby some of the water is evaporated into a moving air stream and subsequently discharged into the atmosphere. As a result, the remainder of the water is cooled down significantly. Water by its basic nature is corrosive. Therefore cooling systems are plagued with corrosion.

Many factors affect corrosion rates in a given cooling water system. The presence of dissolved gases, chloride and sulfate levels, pH, alkalinity, scaling tendency, and protective ions such as calcium, magnesium, phosphate nitrate, and silicate must all be taken into consideration. The first step to control is detection therefore regular monitoring of the above is absolutely essential.

The Following parameters can be analyzed using AE 101:

Parameter	Range
Total Hardness	2--40, 5--100, 25--500 mg/l as $CaCO_3$
Calcium Hardness	5--100 mg/l as $CaCO_3$
Alkalinity	10-- 200 & 100--2000 mg/l as $CaCO_3$
Chloride	10--200 & 50--1000 mg/l as Chloride
pH	4 to 10
Iron (Low Level)	0.05, 0.1, 0.3, 0.4, 0.7, 1.0, 1.5, 2.0 mg/l as Fe
Silica	5, 10, 20, 40, 60, 80 mg/l as SiO_2
Orthophosphate	0, 5, 10, 20, 30, 40 mg/l as PO_4
Free Chlorine	0.1-2.0 mg/l as Chlorine

BOILER (PRODUCT CODE: AE 102)

Boilers are systems which generate steam, which consists of two principal parts: the furnace, which provides heat, usually by burning a fuel, and the Boiler proper, a device in which the heat changes water into steam. The steam or hot fluid is then recirculated out of the boiler for use in various processes for heating applications.

Proper pre-treatment of Boiler feed water is an important part of operating and maintaining a boiler system. As steam is produced, dissolved solids become concentrated and form deposits inside the boiler. This leads to poor heat transfer and reduces the efficiency of the boiler. Dissolved gasses such as oxygen and carbon dioxide will react with the metals in the boiler system and lead to boiler corrosion. In order to protect the boiler from these contaminants, they should be eliminated or at least through external or internal treatment.

RAKIRO

The Following parameters can be analyzed using AE 102:

Parameter	Range
Total Hardness	2--40, 5--100, 25--500 mg/l as $CaCO_3$
Calcium Hardness	5--100 mg/l as $CaCO_3$
Alkalinity	10-- 200 & 100--2000 mg/l as $CaCO_3$
Chloride	10--200 & 50--1000 mg/l as Chloride
pH	4 to 10
Iron (Low Level)	0.05, 0.1, 0.3, 0.4, 0.7, 1.0, 1.5, 2.0 mg/l as Fe
Silica	5, 10, 20, 40, 60,80 mg/l as SiO_2
Orthophosphate	0, 5,10, 20, 30, 40 mg/l as PO_4
Sulphite	5--100 mg/l as Na_2SO_3

DRINKING WATER (PRODUCT CODE: AE 103)

Drinking water is supposed to be safe for consumption by humans and animals. Water may be naturally safe, or it may need to be treated in order to be safe. Water which is not safe to drink can carry diseases and heavy metals.

The Following parameters can be analyzed using AE 103:

Parameter	Range
pH	4 to 10
Alkalinity	10--200 & 100--2000 mg/l as $CaCO_3$
Total Hardness	2--40, 5--100 mg/l as $CaCO_3$
Fluoride	0.2--2.0, 0.5--5.0 mg/l as Fluoride
Nitrate	1.0, 2.5, 5, 7.5, 10, 20, 30, 40, 50 mg/l as NO_3
Chloride	10--200 & 50--1000 mg/l as Chloride
Iron (Low Level)	0.05, 0.1, 0.3, 0.4, 0.7, 1.0, 1.5, 2.0 mg/l as Fe
Free Chlorine (DPD)	0.1--2.0 mg/l as Chlorine
Turbidity	1, 5,10, 25 as NTU

RO WATER (PRODUCT CODE: AE 104)

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.

The Following parameters can be analyzed using AE 104:

Parameter	Range
pH	4 to 10
Total Hardness	2-40, 5-100, 25-500 mg mg/l as $CaCO_3$
Calcium Hardness	5-100 mg/l as $CaCO_3$
Silica	5, 10, 20, 40, 60, 80 mg/l as SiO_2
Sulphate	5--100, 50--1000 mg/l as Sulphate
Iron (Low Level)	0.05, 0.1, 0.3, 0.4, 0.7, 1.0, 1.5, 2.0 mg/l as Fe
Nitrate	1.0, 2.5, 5, 7.5, 10, 20, 30, 40, 50 mg/l as NO_3
Nitrite(Low Level)	0.04--0.8 mg/l as NO_2

SWIMMING POOL (PRODUCT CODE: AE 105)

Swimming pool water is a carrier of harmful bacteria. Hence, microbiological quality is the most important parameter for the safety of swimming pool water. Therefore there is broad consent that disinfection of pool water is indispensable. Concentration of free chlorine in swimming pool water is necessary to achieve this goal.

The Following parameters can be analyzed using AE 105:

Parameter	Range
Free Chlorine	0.1–2.0 mg /l as Chlorine
pH	4 to 10

PURIFIED WATER (PRODUCT CODE: AE 106)

Highly purified water is an essential component of biopharmaceutical industry. It is used as an ingredient in both research procedures and drug formulations and also for general cleaning, rinsing, etc. In each case the water source must be processed and treated to microbial and chemical contaminants that would otherwise compromise the quality, safety, efficacy and purity of finished product.

Following parameters can be analyzed using AE 106:

Parameter	Range
Acidity	10-200 & 100-2000 mg/l as $CaCO_3$
Alkalinity	10-200, 100-2000 mg/l as $CaCO_3$
pH	4 to 10
Calcium, Magnesium	5--100 mg/l as $CaCO_3$
Ammonium	0.5, 1.0, 2.0, 4.0, 6.0, 8.0 mg/l as NH_4
Sulphate	5-100, 50-1000 mg/l as Sulphate
Chloride	10-200, 50-1000 mg/l as chloride
Heavy Metal as Pb	

METAL WORKING FLUIDS (PRODUCT CODE: AE 107)

Water is the major ingredient in a water soluble metalworking fluid mix. It may amount to as much as 90-99% of the mix as used. Therefore, its importance in product performance can not be ignored. Corrosion, residue, scum, rancidity, foam, excess concentrate usage, or almost any metalworking fluid performance problem can be caused by the quality of the water used in making the mix. Untreated water always contains impurities. Some impurities affect drastically by reacting or combining with metalworking fluid ingredients. These impurities can change performance characteristics. Therefore, water treatment is necessary to obtain the full benefits of water soluble metalworking fluids.

Following parameters can be analyzed using AE 107:

Parameter	Range
Total Hardness	2--40, 5--100 mg/l as $CaCO_3$
Chloride	10--200 & 50--1000 mg/l as Chloride
pH	4—10

APPLICATION OF AQUASOL® COMBINATION KITS IN DIFFERENT WATER SYSTEMS IS AS FOLLOWS:-

Water Systems	Product Code	Industries	Applications
Cooling Systems	AE 101	Pulp & Paper , Textile, Steel, Fertilizers, Chemical Manufacturing Units, Sugar, Refineries, Thermal Power Stations, Engineering Units	Make-up Water, Re-circulating Water, Basin Water
Boiler	AE 102	Pulp & Paper , Textile, Steel, Fertilizers, Chemical Manufacturing Units, Sugar, Refineries, Thermal Power Stations, Engineering Units	Raw Water, Softener, Blowdown Water, Feed Water, Boiler Water
Potable Water	AE 103	Universal	Drinking Water
RO Water	AE 104	Industries having Reverse Osmosis (RO) Plants	Feed Water and Permeate Water
Swimming Pool	AE 105	Hotels & Resorts, Houses, Pool Water	Monitoring
Purified Water	AE 106	Pharmaceuticals	Purified Water
Metal Working Fluid	AE 107	Engineering Units	Process / D.M. Water

Aquasol® Combination Kits are available for customized parameters and ranges.