

Criterion IV: Infrastructure and Learning Resources

4.1.1 The Institution has adequate infrastructure and physical facilities for teaching – learning, viz., classrooms, laboratories, computing equipment, etc.

Water Analysis Lab



Latitude: 9.939417
Longitude: 76.295466
Elevation: -85.1m
Accuracy: 41.2m
Time: 15-01-2021 16:36
Note: water analysis lab11

The Department of Chemistry, Sacred Heart College Thevara has a well-equipped water analysis lab (aqua one center) and the department offers consultancy services in water quality analysis. The aqua one centre was sponsored by Central Marine Fisheries Research Institute (CMFRI), Kochi. Student volunteers of Bhoomitrasena club are actively involved in analyzing water samples from the public. Equipment like pH meter, UV-Visible spectrophotometer, turbidity analyzer, colorimeter, vacuum oven, homogenizer, autoclave, salinometer, laminar flow hood etc. are used for the analysis. The physico-chemical parameters including pH, hardness, residual chlorine, nitrite, nitrate, ammonia, iron, alkalinity, salinity and E.coli content were analysed in a normal water sample analysis. A nominal fee of Rs 500 per sample is charged from the public for the entire analysis. Dr. Midhun Dominic C D (Asst. Professor, Dept. of Chemistry) and Dr. Anju (Asst. Professor, Dept. of Environmental Studies) are in charge of the water analysis lab

Laminar airflow cabinet



Laminar airflow cabinet is an enclosed bench used for the safety of different samples especially biological samples and sensitive materials. It is made up of stainless steel and due to the laminar air flow sample can be kept safe. The UV lamp and FL lamp within the instrument sterilize the samples.

Use: sterilization and protection of samples

Specifications: Model no: KLF. 2SS, 1 Phase, 230V, 50Hz

Homogeniser



Homogeniser consists of a working motor and a long probe. It is used for the reduction of size of the samples usually dispersions or liquid samples to obtain a solution with uniform distribution and composition. The energy passing through the liquid applies a force and shears the substance to smaller size.

Use: Size reduction and homogenisation of samples

Specifications: Model no: D- 500, 220-240V, 50Hz, 500W

Mechanical stirrer



Mechanical stirrer is a vertical stirrer with a working motor used for the mixing and stirring of different samples. It allows the mixing of different liquids and suspensions by immersing the vertical rod in the sample thus the stirrer blend the samples well and make the reaction faster.

Use: Mixing of samples

Specifications: Model no: KLS.101.C, 1 phase, 230V, 50Hz

Water bath



Water bath is a rectangular container including a heating coil at the bottom. It is filled with the water before use. We can adjust the temperature and can be used to keep a reaction for a long time at constant temperature. Once it is put up, the heating coil maintains the constant temperature of water. It can be used for melting of samples and heating of flammable chemicals without the direct explosion to the open flame.

Use: Maintain a constant temperature for a long time.

Specifications: Model no: 13288, CAT no: RRW- 6, 230V, 50Cps, 10AC, 500W

Hot plate stirrer



Hot plate stirrer is a type of magnetic stirrer in which samples can be evenly stirred. It is five station hot plate stirrer in which the stirring occurs via rotating magnetic field generated by the magnet or set of magnets within the instrument. The advantages of this are time, temperature, pulse and speed can be adjusted. It can be used for stirring of samples for a long time.

Use: Stirring and Mixing of samples

Specifications: Model no: OI009482, Stir HP 5M, 220V- 1.7A, 400W, 1500 RPM speed

Digital pH Meter



Digital pH Meter is an important instrument for determining the pH of the solutions i.e. the acidity or alkalinity of the samples can be determined. It consists of a voltmeter and a glass electrode. The electrode is dipped in the solution in which the pH is to be determined and we get the voltage proportional to the H⁺ ion concentration.

Use: Determination of pH

Magnetic stirrer



Magnetic stirrer is an instrument used for stirring of samples in presence of magnetic field. It consists of a hot plate and magnets within the instrument. It can be used for the even mixing of samples which is kept at the hot plate along with a magnetic rod. The speed and temperature can be adjusted.

Use: Stirring and Mixing

Specifications: Model no: KMS- 500, 1 phase, 230V, 50Hz

Autoclave



Autoclave is a long cylindrical chamber. The chamber is filled with water in a minimum level and the sample is kept in the vessel inside it. It is a completely automatic machine which can be used for carrying out reactions under very high temperature and pressure. Here the sterilization of the sample takes place by increased pressure as a result of elevated temperature and the temperature can be controlled.

Use: Sterilization of samples