

Phosphorus Merck Aquamerck

Equipment

- Distilled or deionised water
- Safety gloves and safety glasses
- Merck Aquamerck Phosphorus kit



Method

1. Rinse the test vessel with the water to be tested.
2. Fill the vessel to the 5 ml mark with water sample.
3. Add 5 drops of Reagent 1 into the sample tube and swirl.
4. Add 1 level microspoon of reagent 2 to the sample tube and dissolve by swirling.
5. After 2 minutes, place the test vessel on the colour card and match the colour to the closest standard colour on the card.
6. Report the concentration of phosphorus (P) as mg/L on your result sheet.
7. If the colour obtained is equal to or more intense than the darkest colour on the scale, repeat the measurement on a fresh diluted sample. Dilute the sample 1 : 1 in the test vessel with clean phosphorus-free water.

Note: Remember to multiply your answer by the dilution factor.

8. If the sample is turbid, you must take this into account when comparing colours.

Checklist

- When reading the concentration levels, try and allow maximum sunlight to shine directly into the tubes.
- High turbidity levels make determination of phosphorus more difficult as the blue colour may not be clearly visible against the brown background.
- The Merck kit allows some guesstimates of phosphorus levels when samples are turbid.
- The higher the level of phosphorus, the less the problem of sample turbidity. Samples must be diluted if the level of phosphorus is greater than 1 mg/L. This means that turbidity levels will also be diluted.
- Standard methods require the sample to be filtered through 45 um filter. This is not feasible for community groups. Filtration with Whatman No. 42 filter paper will eliminate any gross suspended material.
- Test should be carried out at room temperature. Where the ambient temperature is below 20 degrees centigrade, colour development may be slower than one minute as stated in the method accompanying the kit. If crystals have not dissolved, be wary.
- The colour of the measurement solution remains stable for at least 30 minutes.
- If the level of phosphorus is greater than 1 mg/L, repeat the measurement with a fresh diluted sample.
- If testing a solution for orthophosphate, analyse the solution as soon after sampling as possible.
- The Merck kit measures the amount of soluble orthophosphate in a solution. Phosphorus exists as organic and meta and polyphosphates as well in solutions. These forms can only be measured if converted to orthophosphate by boiling with sulphuric acid and persulphate.
- Do not clean reagent bottles and test tubes with detergents that contain phosphates.