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The Photometry Dictionary

TIPS AND TRICKS FOR PHOTOMETRIC MEASUREMENTS -
FROM OUR CUSTOMERS' MAGAZINE

WATERWORLD

Measuring on the Go - Tips for the Photometric Measurements (Part 1)

Measuring on the go – tips for photometric measurements (Part 1)

With the increasing importance of water monitoring, mobile photometric measuring is becoming more important as well. Two main factors for the successful execution are the suitability or the correct handling of the devices, and also with the reagents. In this contribution, we want to focus on the reagents.

Reagents are subject to limitations regarding durability and maximum storage temperature; if these are exceeded, there may be impacts on the measuring values depending on the sensitivity of the reagent:

All WTW photometers allow on-site measurements. Which extras, such as low-energy or protected from the elements: we will introduce this in the next edition.

- **Temperature influence**
The optimum storage temperature is usually at around $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$. This applies to all powder tests; please observe the different data for other tests in the package insert. During transport, especially in the trunks of cars, temperature influences cannot always be avoided. Reagents with high steam pressure or volatile substances can escape after extended storage, so be careful during opening!
- **Durability and reliability**
Durability and reliability can also suffer from temperature fluctuations. This makes the tin test age faster. Other substances, such as the chlorination reagent during the ammonium test, can lose their effectiveness, which can lead to incorrect, lower measuring values.
- **Accuracy and application**
Powder tests are practical and quick in their handling, but are generally less precise, but much more reasonable in price, which is ideal for monitoring. A setup that is protected from wind is recommended so that the reagent remains in the cuvette and does not end up in your nose.
- **Sample temperature**
Chemical reactions are temperature-dependent: The response time and the development of coloration can be significantly reduced for a cold sample and should possibly be (re)measured after a longer dwelling time. On the other hand, a very warm sample can lead to a shortening of the indicated dwelling time.

Therefore, reagents should only be taken in the required volume. Here, you should always consider a double determination and a control value with standards and some reserve. The powder tests in the „portion bags“ are especially recommended for monitoring.

In order to keep the temperature fluctuations at a minimum in the trunk, the transport in a large styrofoam box is helpful; also, you should avoid extended storage periods in the trunk.

If you consider these notes during data capture, “mobile” measuring data is as reliable as measurements in the laboratory!