novasina
The Art of Precision Measurement

## Water Activity Measurement, Simple as Never Before!

Let's welcome the next generation of high quality water activity meters made by Novasina. Touch a new world, driven by the ease of use and fast menu access by a **touch-screen** combined with a **semi-temperature-stabilised** measurement chamber for consistent and reproducible measurement results ($a_W$-value). The latest sensor and measurement technology coupled with re-useable humidity calibration standards provide a very economical solution to precision water activity measurements. Furthermore, the standards are an easy method for double-checking the instrument and sensor's high performance.

The ***Lab*Touch-aw ,** with its ergonomic design and the touch-screen , makes water activity measurements easier than ever before. Semi-temperature-control and active sample temperature measurements, by an integrated infrared sensor, provide the highest possible reliability of measurements.
All measurement data, including the important protocols are stored on a SD card and can be transferred to a PC or printer. Special software is available for viewing results & analysis of the data. This assures confidence in readings for quality assurance and traceability of all measurement values.

In summary, the ***Lab*Touch-aw** assures high measurement accuracy and reproducibility, long-term stability, ease of use and an economical measurement system. Get ready for the new standard for **$a_W$-value** measurement.

**Advantages:**

- ☑ Easy accessible menus by large touch-screen
- ☑ Semi-temperature-stabilized measurement chamber
- ☑ Re-usable SAL-T humidity standards and long-life sensor for economy
- ☑ Fast and precise $a_W$-measurement thanks to the worldwide unique "*Novalyte*" measurement technology
- ☑ Specific chemical sensor protection filters available
- ☑ Calibration data is stored on the sensor
- ☑ Data logging function with SD card
- ☑ Factory calibration at 7 $a_W$-value points
- ☑ Checking, testing and adjusting possibilities (SAL-T humidity standards)
- ☑ Visualization and analysis software "Novalog MC"

### What is Water Activity ($a_w$)?

Water activity is defined as the current volume and availability of “free” water in a sample and should not be directly compared with the water content (g water/ g substance). The water activity is given as the $a_W$ – value and ranges between 0 (absolute dryness) and 1 (100% relative humidity). Only this component takes an active part in the exchange of moisture with the ambient air and can possibly form the

ideal medium for microbiological growth on the surface which influences the microbiological stability.
To determine the $a_w$-value the relative humidity over a sample is measured after **reaching the equilibrium humidity** (partial water vapour pressure). This relates proportionally to the $a_w$-value. An accurate and significant $a_w$-measurement is only possible, if the sample shows a constant temperature during the measurement, thus a temperature controlled measuring chamber in the range of 0°C to 50°C is absolutely mandatory.
The time for establishing the equilibrium between the free water in and water vapour over the sample is the key for an accurate, reliable and reproducible $a_w$ measurement.

"Free" water in products is jointly responsible for the growth of unwanted micro-organisms such as bacteria or fungi, which produce "toxins" or other harmful substances. But also chemical/biochemical reactions (e.g. the Maillard reaction) increasingly take place and can change the following factors of a product:

- Microbiological stability (growth)
- Chemical stability
- Content of proteins and vitamins
- Colour, taste and nutritional value
- Stability of the compound and durability
- Storage and packing
- Solubility and texture

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