

## Hygrometer

**(food, skin, laboratory climates)**

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There is no need to talk much about how important the environmental conditions are. The amount of water in the air, for example, may create either a very pleasant ambience or a horrible environment with no possibility to breathe. Depending on the level of humidity the goods can be kept fresh and preserved for a very long time and on the contrary, if the conditions are not right and appropriate, they will be spoilt very quickly and exactly humidity will cause the process of rotting and destruction.

In the store house the temperature and humidity data are almost the most important parameters. Hygrometer, being a small and easy to operate device helps to provide that information, and to keep the necessary level under control. In that case, the devices can be mounted on the wall and the measurement will be taken with the certain intervals. Wrong level of humidity can bring



to very undesirable consequences; that is why food industry relies on the results of the humidity measurements a lot. The main task is to limit the amount of water to such an extent so that to avoid its negative influence on the quality and looks of the final product. The possible condensation that may happen is often a reason for corrosion, spreading of microbes. Such measurement should be conducted during the processing process as well as later, during the preservation, and possible transportation. It is also very important to exclude the possible contamination of the raw material during the processing and of the ready-made product.

Food producers should work on improvement and maintaining good quality air and that implies a complex of measures, such as, taking measurements regularly, adjusting the equipment, providing sufficient filtration and conditioning, appropriate temperature, air pressure etc. there may be two



ways to change the level of humidity – humidification and dehumidification. No matter which one needs to be applied – a lot of attention must be paid to the maintenance of the appropriate hygienic norms, which means avoidance of microbes and extreme condensation in the undesirable areas.

Human health depends on many factors and humidity level is one of them. It is extremely important to maintain the optimal level of humidity in the air to create sufficient working conditions and to diminish the possible negative influences on people. Except the air in the environment, there are also other factors which can influence the health of people. Excessive amount of water in the air may create “perfect” conditions for the mould and dust and their growth and spreading. This can happen in the working rooms, hotels, various institutions, even household. A very unpleasant but true fact is that excessive humidity creates “paradise” for mites which become the reason for many allergic reactions. This problem may happen even in the areas which make an impression of very clean and tidy. Water is the main nourishment for the parasites and that is why only reduction of the humidity level may become the main weapon against them.



Hygrometer can help to handle all of the above mentioned problems. At the same time it can indicate if the level of humidity is very low, which is also not good and may create problems for breathing, may lead to uncomfortable feeling in the eyes, nose.

Speaking about human health it is worth mentioning the necessity to measure the level of hydration of the skin surface. The electrical device can give information about the condition of a very dry skin and its low hydration, for example, for patients with psoriasis. Healthy skin should have the right color, be smooth and without wrinkles. Deficit as well as overdose of the necessary elements brings to deterioration of skin's condition. The skin of each individual is unique and that is why before trying some new treatments or types of cosmetics it is necessary to find out what kind of skin every person has got. A small portable hygrometer indicates the level of moisture in the skin. It gives the wide spectrum of information about its general condition, its hydration and elasticity.

One more area where the level of humidity may have a crucial importance is the laboratory. Depending on the experiments and tests which run there the required level may vary from low (20%) to high (80%). A chilled mirror method is a widely spread way to measure the relative humidity level.



A lot of hygrometers based on that principle are applied at the calibration laboratories. To carry out calibration it is necessary to generate different humidity levels at different pressures and temperatures. With the help of Hygrometers for laboratories it is possible to conduct precise and accurate measurements under different conditions. Dew-point hygrometers are often applied in calibration laboratories, they help to analyze air and gas condition and maintain the necessary levels of water content in the air.