

pH / Temperature Probe for Meat

The FC2323 probe has been specially designed with a stainless steel blade tip for meat penetration.

PVDF body

Polyvinylidene fluoride (PVDF) is a food grade plastic that is resistant to most chemicals and solvents, including sodium hypochlorite. It has high abrasion resistance, mechanical strength, and resistance to ultraviolet and nuclear radiation. PVDF is also resistant to fungal growth.

Viscolene electrolyte

The viscolene electrolyte offers a hard gel interface between the inner electrode components and the sample being measured. The electrolyte is silver-free for use in food products and is maintenance-free.

Stainless steel piercing blade

The FC099 (35mm; 1.38") stainless steel blade can be attached to the probe for easy meat penetration. Piercing into the meat will allow for the pH glass and reference junction to be in contact with the sample for a direct pH measurement without extensive sample preparation.

Open junction reference

Clogging of the reference junction is a common challenge faced by food producers that measure pH in semi-solid products such as meat. The solids can easily clog the ceramic junction used with standard laboratory pH electrodes. The open junction design of the FC2323 resists clogging and continues to provide accurate, stable readings.

Low temperature glass

The FC2323 electrode uses Low Temperature (LT) glass for the sensing bulb. The LT glass tip is a lower resistance glass formulation. As the temperature of the sensing glass decreases, the resistance of the LT glass will increase approaching that of standard glass at ambient temperatures. The FC2023 is suitable to use with samples that measure from 0 to 50°C.

Built-in temperature sensor

A thermistor temperature sensor is in the tip of the indicating pH electrode. A temperature sensor should be as close as possible to the indicating pH bulb in order to compensate for variations in temperature.

Conic tip shape

This design along with a piercing blade allows for the easy penetration into semisolids for the direct measurement of pH.



Application Importance

In the meat production industry, the monitoring of pH is considered to be of the utmost importance due to its effect on the meat's quality factors including water binding capacity and shelf life. Upon slaughter, biochemical processes begin to break down the meat. Glycolysis begins post-mortem, converting glycogen to lactic acid, reducing the pH of the carcass. Depending on a number of factors such as type of animal and even breed, this decrease in pH can take anywhere from a single hour to many. It is vital to monitor pH during this phase as once the lowest pH value is reached, the pH will begin to slowly rise, indicating that decomposition has begun.

The pH value of meat influences its' water binding capacity which directly impacts consumer qualities such as tenderness and color. Lower pH values result in a lower water-binding capacity and lighter colors. Factors such as these can be important when considering how to efficiently produce meat products. For example, when producing dry sausages the meat must have a low water binding capacity so that it can dry evenly.

Depending on the type of the final product and the steps required to get there, pH values will vary throughout the meat processing industry. It is imperative, regardless of the final product, that pH be maintained at a low value to prevent bacterial spoilage and comply with food safety regulations. By monitoring pH values throughout the meat production process, you can ensure the creation of consistent and safe meat products.

Specifications	FC2323
Description	pre-amplified pH/temperature probe
Reference	single, Ag/AgCl
Junction	open
Electrolyte	viscolene
Max Pressure	0.1 bar
Range	pH: 0 to 12
Recommended Operating Temperature	0 to 50°C (32 to 122°F)
Glass Type	LT (low temperature)
Tip /Shape	conic (dia: 6 x 10 mm)
Temperature Sensor	yes
Amplifier	yes
Body Material	PVDF
Cable	coaxial; 1 m (3.3')
Connection	quick connect DIN