DENSITY OR TOTAL SOLIDS OF COLLAGEN & GELATINE

Precise process monitoring to optimize production

QUALITY
MADE IN
GERMANY

BERTHOLD

DENSITY OR TOTAL SOLIDS
OF COLLAGEN AND GELATINE

Collagen and gelatine are essential proteins derived from animal tissues, widely used in various industries, including food, pharmaceuticals, and cosmetics. Collagen is the primary structural protein found in skin, bones, and tendons, providing strength and flexibility. Gelatine, on the other hand, is a denaturised form of collagen obtained through controlled hydrolysis, allowing it to dissolve in hot water and form a gel structure upon cooling.
The industrial production of collagen and gelatine involves several stages, including raw material selection, pre-treatment to extraction, purification, and drying. These processes ensure high-quality end products with properties suitable for the intended applications. A clear understanding and optimization of production steps, such as dry matter measurement, are essential for improving efficiency and ensuring quality control.

Precise & reproducible microwave measurement

Accurate measurement of total solids or density in collagen and gelatine is essential for optimizing production processes, ensuring regulatory compliance, and maintaining consistent product quality particularly during critical stages such as pre-treatment, extraction, and concentration.The Micro-Polar LB 566 measurement system from Berthold, highly accurate and repeatable measurements, ensuring stable and reliable process control from start to finish.

Typical applications

- **Food Industry** (gummy bears, fruit gummy, jelly deserts, dairy, beverages)
- **Pharmaceutical industry** (gelatine capsules, tablet coatings, blood clotting agents)
- **Cosmetic industry** (collagen anti-aging creams, serums, shampoos make up)

Food safety through international quality standards

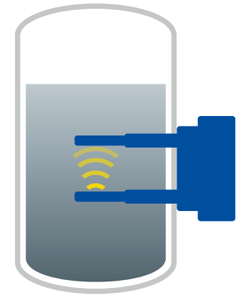
The agency standards confirm that our Berthold microwave sensor, FlowCell, has been evaluated and found to be in compliance with current Hygienic Equipment Design standards

Measuring principle

The microwaves pass through the product to be measured, causing rotation of the free water molecules. They have excellent dielectric properties. This rotation causes the microwaves to slow down (phase shift) and decrease in amplitude (attenuation), resulting in a very accurate measurement of the water content.

Thanks to the multi-frequency technique used by Berthold, the measurements are highly reliable and stable and are not affected by reflectance or resonance. The integrated reference line provides excellent compensation of the influence of environmental parameters. As the device generates very low power microwaves (about 0.1 mW), the measured product does not undergo any temperature rise or changes. The radio licenses for the system have been approved by the FCC, IC and ETSI.

Schematic represenation of a pipe installation with FlowCell



Schematic representation of an installation with container probe in a cooking pan

Customer Benefits

- Online total solids or density measurement
- Optimisation & control of the production process
- Cost reduction through optimised use of resources
- Optimised pump utilisation avoids blockages and ensures optimum efficiency
- Non-optical measurement, not sensitive to contamination therefore no cleaning required
- Not sensitive to film build-up

Technical Features

- High accuracy < 0.2 wt.% dry matter content (first standard deviation)
- Representative measurement results due to detection of the entire material flow in the pipeline
- Reliable measurement with only one calibration factor, even with different sludges
- Maintenance-free

THE EXPERTS
IN MEASUREMENT TECHNOLOGY

Berthold Technologies stands for excellent know-how, high quality and reliability. The customer is always the focus of our solution.
Using our varied product portfolio, our enormous specialized knowledge and extensive experience, we develop suitable solutions together with our customers for new, individual measurement tasks in a wide variety of industries and applications.

We are here for you – worldwide!
The engineers and service technicians from Berthold Technologies are wherever you need them. Our global network assures you fast and above all competent and skilled assistance in case when needed. No matter where you are, our highly qualified experts and specialists are ready and waiting and will be with you in no time at all with the ideal solution for even the most difficult measurement task.

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