Product QPAbutter

On-line FT•NIR analyser

QPAbutter is a well proven process solution to monitor and control the **moisture, fat and salt** content in butter, margarine and similar products. It uses the innovative sampling technique **Tefwin**. Two process lines can be analysed, making cost per channel attractive compared to other NIR solutions.

The design makes it ideal to put in the heart of the process, where temperatures and splashing water normally makes spectroscopy less attractive. The cells are installed directly in the process line, making real time control over the process possible. The analyser used in QPAbutter is a 2 channel high performance ABB FT•NIR spectrometer. Fibre optical cables bring the light to one or two Tefwin cells. A very high performance silicon detector is mounted in the cell and the spectrum/signal is returned for processing.

The CE-marked Tefwin cell features as the only cell of its kind in the world: no glass parts in contact with process, only PTFE windows and SS316 body parts. The standard cell handles pressure of 12 bars and operates with product temperature from 5-60 °C (120 °C in the cleaning process). The cell is CIP/SIP compliant. The standard Tefwin cell is available for pipes of diameter 100 and 150 mm (European 4 and 6 inch). The cell comes with a flexible choice of flanging, standard is TC.

Applications data

Product	Components
Butter	Moisture, fat, salt
Moisture	15-19 %, +/- 0.10%*
Fat	78-83% +/- 0.20 %*
Salt/NaCl	0-2% +/- 0.05*

* 1σ, repeatability <0.05% for all comp. The accuracies listed in the table are guidelines and are dependent on standard deviations obtained in the reference laboratory.

Compatibility to at-line

The calibration models used in the QPAbutter are compatible and directly transportable to our lab solution for butter QFA focus. By directly sharing the model between on-line and at-line FT•NIR, the calibration work is minimised and better models can be created.

Attractive ROI

Applying on-line monitoring of the dairy process gives an opportunity to control the quality and the composition of the main ingredients, like fat and moisture rejections. This results in less product variation and spills, which leads directly to higher production profit.
Payback time typically less than one year.