



## APPLICATION REPORT Food & Beverage

### Mass flow measurement in the production of cottage cheese and spreadable cheese



- Dosage of ingredients
- Measurement of the quantity of the end product
- Consistent quality in the different cheese types

#### 1. Background

Edelweiß, one of Germany's leading cheese producers, produces a wide variety of premium brand cottage cheese and spreadable cheeses. Depending on the final product, the base products vary, including milk and vegetable oil as well as various other ingredients but they must all be precisely dosed to ensure consistent quality. In addition to monitoring the dosing of the ingredients, the producer also monitors the overall yield of cheese from the raw milk product.

Years ago, cheese producer Edelweiß made the decision to replace all measuring devices with CORIOLIS mass flowmeters because these meters measure with higher accuracy and repeatability, thus ensuring the consistent quality of the end products. Measurement properties such as electrical conductivity and viscosity have no influence on the measuring accuracy.

#### 2. Measurement requirements

Besides milk, vegetable oil is the second major base material in cottage cheese production. Vegetable oil is highly viscous and is not electrically conductive. To ensure that the oil can flow freely, the pipelines are heated to prevent blockages when flow velocities are low. The quantity of oil used is measured directly at the outlets of the storage tanks. Solids and entrained gas must not influence the measurements. In addition, the devices must be suitable for use with foodstuffs and have the appropriate approvals.

## 3. KROHNE solution

KROHNE supplied the cheese producer Edelweiß with OPTIMASS 7300 C mass flowmeters in a variety of sizes for these applications.

The single tube technology which features no flow splitters or built-in components in the measuring tube keeps any additional pressure loss to a bare minimum.

There are no special requirements when it comes to installing the meters in the pipelines and there is also no need for the otherwise commonly used inlet and outlet sections.

As they are a component of the pipelines, the straight tube meters are easily cleaned by way of CIP and SIP. The meters are maintenance-free.



Measurement of finished end product prior to filling

## 4. Customer benefits

For creameries and cheese dairies, OPTIMASS mass flowmeters from KROHNE offer many advantages including low investment and follow-up costs.

Excellent accuracy and repeatability ensure exact measuring results and thus consistent quality in the different types of cottage and spreadable cheese.

OPTIMASS 7300 C measuring devices can measure temperature and density in addition to the mass flow, which is important with changing process parameters. This enables different products to be processed one after the other using the same measuring device.



Measurement of vegetable oil

## 5. Product used

### OPTIMASS 7300 C

- The only mass flowmeter with a single straight measuring tube available in Stainless Steel, Hastelloy®, Titanium or Tantalum
- Minimal pressure loss
- Reliable measurement of mass and volume flow, density, temperature, concentration and solid content
- No installation restrictions, easily drained and easy to clean
- High measuring accuracy, even when process conditions change
- Available with all the hygienic connections common to the food industry



### Contact

Would you like further information about these or other applications?  
Do you require technical advice for your application?  
application@krohne.com

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