SULZER

Sulzer Heat Exchangers SMR™

Eliminate cheese packaging problems with precise temperature control

High-performance cooling technology to maximize cheese production efficiency.

Industry challenge

Cheese processors face significant quality and efficiency challenges during cooling processes. Traditional heat exchangers often create inconsistent temperature distribution, leading to product quality issues such as deposit formation, color changes from Maillard reactions, and texture variations. These temperature control problems directly impact packaging line efficiency, increase production waste, and result in higher maintenance costs. Without precise and uniform cooling, manufacturers struggle to maintain product consistency and meet production targets while ensuring food safety standards.

The solution – Sulzer SMR Heat Exchangers

Our innovative static mixing technology delivers precise temperature control and is widely used in the food industry to cool high-quality products.

The SMR technology utilizes a unique static mixing principle with a large and constant heat-transfer area.

- Maintains homogeneous heat transfer across the entire product batch.
- Prevents product splitting and varying residence times.
- Better heat transfer compared to other alternatives.
- Enables uniform cooling without dead zones.

Case study – Successful application in cheese manufacturing

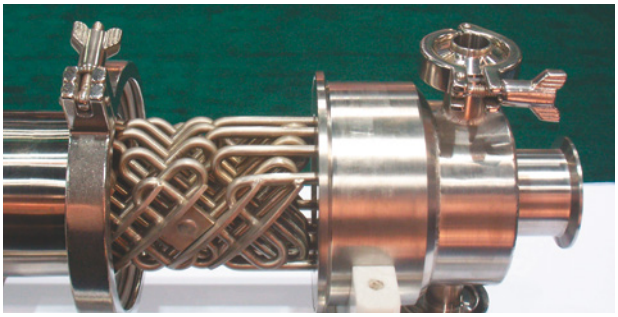
After upgrading their packaging line, a major cheese producer encountered significant challenges; the cheese had to be cooled down around 10°C to prevent packaging issues when wrapping the cheese slices with foils.

The existing water bath was not providing the right temperature, so a heat exchanger solution was needed with the following requirements:

- Uniform temperature distribution at the outlet to ensure no formation of hot spots.
- Narrow residence time so the cheese doesn't stay too long or build deposits; and prevent the risk of Maillard reaction of milk proteins, which will cause differences in color and flavor, affecting the quality.
- Easy to clean, with a service time of around 1 week. n.

Customer-centric solution

A Sulzer SMR (Nominal diameter 150 mm / 6") was designed for the client with a customized length to optimize heat transfer while minimizing dead zones. The SMR was reinforced to support regular "stop and go" production, allowing for easy insert removal.



The performance of the SMR surpassed expectations by achieving the desired cooling rates, preventing any deposits, and meeting the required service time. As a result, the producer was able to produce high-quality cheese without any issues in the packaging of the sliced cheese.

Technical results

The new system delivered measurable improvements:

- Exceeded cooling performance targets
- Eliminated deposit formation
- Met all service interval requirements
- Improved packaging line efficiency
- Zero quality issues in sliced cheese production

Business impact

By achieving precise cooling to 10°C with uniform temperature distribution, the Sulzer SMR heat exchanger eliminated packaging problems in cheese slice production while preventing costly quality issues like Maillard reaction and deposit formation. The producer benefited from consistent high-quality output with no packaging line disruptions, reduced maintenance needs with just weekly service time, and efficient production that has led our customers to install multiple units for reliable performance.

How can we help you?
Contact us today to find your best solution.

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