Anton Paar

From Condensed Milk to Powdered Milk

Relevant for: Milk Industries

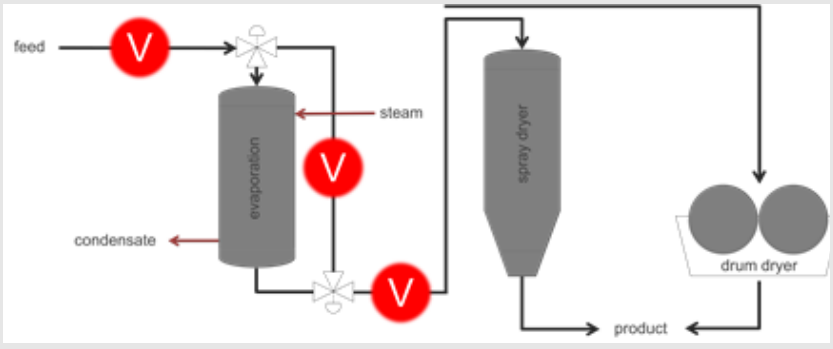
L-Vis 510 - Solid as a rock and rolling with your sample

How is powdered milk condensed?

Powdered milk or dried milk is a manufactured dairy product made by evaporating milk to dryness. One purpose of drying milk is to preserve it. Milk powder has a far longer shelf life than liquid milk and does not need to be refrigerated, due to its low moisture content. Another purpose is to reduce its bulk for economy of transportation.
Powdered milk is usually made by spray or drum drying nonfat skimmed milk, whole milk, buttermilk or whey. Pasteurized milk is first concentrated in an evaporator to approximately 50% milk solids. The resulting concentrated milk is then sprayed into a heated chamber where the water almost instantly evaporates, leaving fine particles of powdered milk solids. Alternatively, the milk can be dried by drum drying. Milk is applied as a thin film to the surface of a heated drum, and the dried milk solids are then scraped off. However, powdered milk made this way tends to have a cooked flavor, due to caramelization caused by greater heat exposure. Another process is freeze drying, which preserves many nutrients in milk, compared to spray or drum drying.

Where to find the inline viscometer in the process plant?

The Anton Paar inline viscosity sensor L-Vis 510 is installed in the feed line of the evaporator's re-circulation loop or directly after the evaporator. The rapid and accurate L-Vis 510 measures the process viscosity and line temperature continuously. The data can be used for controlling the process. Additionally L-Vis 510 can help saving and optimizing processing time.



Specifications

Viscosity: 1 mPa.s to 50.000 mPa.s
Accuracy: 1% (typical)
Repeatability: 0.5% (typical)
Process temperature: -5 °C to 200 °C
Process pressure: 0 bar to 25 bar
Wetted parts:
Stainless Steel No. 1.4542,
diamond-coated SiC seal,
Viton O-ring seal

Other Anton Paar instruments relevant for the application

Laboratory instruments:
- Rheolab QC
- Rheometer MCR series
- SVM™ Series Viscometer
- Lovis 2000 M/ME - Ball Rolling Viscometer

Do you have any questions?

Contact Anton Paar directly:
process@anton-paar.com