SOFRASER

Powdered infant formula Application

PART 2

For Representative's internal use only

Results	Sofraser recommended solution
Benefits	Competitors in this area
Return on investment Users	Guide for identifying viscosity measurement needs

Results

A MIVI process viscometer installation in powdered milk manufacturing leads to improved atomization control in the following process indicators:

Efficiency	Reduces **product loss** **Lowers energy consumption**
Quality	Better control of - powder texture - bulk density - moisture content
Maintenance	Quick start-up Brief down time
Emissions	**Nominal**

Benefits

Inline viscosity monitoring of powdered milk improves manufacturing by:

- **optimizing the homogeneity of dehydrated milk**
- **creating consistent, reconstituted products**
- **increasing yields**
- **reducing losses**

Return on Investment

Once all the parameters influencing viscosity (concentrate temperature, pasteurization conditions, concentrate dry extract, homogenization conditions…) are precisely controlled by Sofraser's MIVI sensor, a dairy facility producing 70,000 tons per year of powder milk observed conformity with customer requirements and constant quality as primary results; but also reductions in energy consumption.
As described below, if the installation reduces even only 1% of energy consumption, savings would represent 32 956 €

Dairy capacity	**70 000 tons of powder/year**
Average energy consumption for 1 l of milk powder	0,35 kwh/l
Electricity average rate for companies in Euro zone (2011)	0,1177 €/kwh
Total cost for 70 000 tons/year	3 295 600 €
Expected energy saving with viscosity control system	**1%**
Potential savings	32 956 €

Dairy industry end-users:

Campina *(see graph and photo)*, La Roche aux Fées, Bongrain Gérard, SICA, Elle & Vire, Watson Victor, Ehzai Pharmaceutical Co., Kavli Ltd., Tiger Käse A.G., General Mills Yoplait, Nestlé Andrezieux Bouthéon, Wilten Fysika, BOURSIN, Fromagerie de Vihiers, Frieslandfoods-Kievit, Laïta, RELCO, Gervais, Danone, Yeo, Bel, Sodiaal, Dairy Crest Foods, Waterford Co-op, Norske Meierier's, Générale Ultra Frais, Valio Ltd., 3A S.A. Emmi Fondue AG Suisse…

Guide for identifying viscosity measurement needs

Topics* and *Key Points

How is the water content of the powdered milk controlled?
Inline viscosity control prior to spray drying the milk powder allows for precise adjustments that consistently meet accurate water levels for the dry milk powder. Production increases significantly.

Does the powdered milk meet quality standards and specifications?
Sanitary environments that produce baby foods must meet extreme quality conditions. While laboratory controls are frequent, only inline control allows for continuous and permanent control of dry extract parameters.

How many laboratory controls are performed to measure viscosity, concentration, dry extract concentration, and / or water content?
Each laboratory control incurs manual labor costs in addition to causing delayed response times. Should a bad result occur, production between controls is unusable and wasted. Inline viscosity control for process quality yields calculable financial savings.

How much time is dedicated to cleaning operations and maintenance?
Due to the vibrating rod, the self-cleaning MIVI sensor may remain in place during the cleaning process. Since the MIVI has non-wearing parts, it does not require separate or additional downtime and does not increase maintenance costs.

What customer complaints are fielded? Are they repetitive? Are they on the rise?
When laboratory controls fail, the customer is the first to notice and report a major (minor, even) quality difference in their baby's food. Brand loyalty is crucial to every producer; inline viscosity control allows product consistency and continued customer satisfaction.

Are process steps such as temperature, time, evaporation, and spray-drying combinations precisely defined?
Any discrepancy generates huge energy waste; undefined parameters indicate imprecise process control and additional losses / costs.

Sofraser recommended solution

MIVI 9510	Option: relays and alarms Option: combined with external controller
MIVI 9100	Low price positioning Option: combined with external controller

Contact Sofraser for detailed sensor configuration

Competitors in this area:

Worldwide:

- Endress Hauser *(but with limited performances)*

This system is also efficient in:

- All types of dry milk (nonfat, whole, buttermilk, milk substitutes)
- Powdered foods (baking supplies, various proteins, spices, eggs, instant potatoes, etc.)
- Lyophilized (freeze-dried) foods
- Whey extract
- Latex