

Measuring Milk

The Globulyser has been developed, in cooperation with the Dutch Dairy industry, for the measurement of the fat globule size in milk fat.

The fat globule size is an indication (prediction) for the oiling off situation in long shelf live dairy or other oily products. If a product has a homogenization degree (= globule size) of about 0,400 micron which is common in UHT milk than for example it can be stored for one year without oiling off. With 0,550 micron it might be reduced to 6 month or less.

The customer does not want to drink a product where there is a fat layer on the top. It looks unappetizing.

The Globulyser can be used for all long shelf live products, like UHT, condensed milk, pasteurized milk, a mixture of milk fat with vegetable fat, every product where the fat should stay in the product without oiling off.

Measuring milkpowder

Also in milk powder the free fat is causing a problem. With the Globulyser the free fat percentage can be calculated. There is a high correlation factor.

From research we know that the Globulyser gives a correlation (R_2) of 0,97/0,98 between the homogenization degree and the free fat percentage in the milkpowder.

Branches with interest for measuring free fat in milkpowder:

Some customers want extra free fat f.e. **the chocolate industry** because it saves cacao oil.

In milk powder for **baby foods** free fat is not wanted, because when it is dissolved in water the free fat is forming a fat layer on the milk, the customer does not want it.

We are also active in the UHT market, apart from quality aspects, concerning homogenization degree and electric power consumption. It seems that very often the manufacturer of UHT milk homogenizes at a too high level to be sure it can meet the quality aspects. But then the industrial homogenizer is working at a too high pressure which costs extra energy.

Research proved **there is a correlation of (R_2) 0,995 between the pressure of the homogenizer and the values of the Globulyser**. So during adjusting the homogenizer, firstly test the pressure with the Globulyser and conclude at which pressure the quality is within the quality requirements.

In some factories they can easily save 5% of energy which means on a yearly base € 20.000,--

If a plant has more than one homogenizer, there is also this problem to let them functioning at the same level. The same homogenizer pressure does not mean the same homogenization degree. The Globulyser is ideal to control the efficiency of each homogenizer and to bring them at the same level.

The money the manufacturers can save by avoiding claims from super markets is also enormous. We don't know how exactly how much, because this is always negotiated behind closed doors. But we know from resources, these are big amounts.

Our instrument is developed especially for fat and the results are completely objective.

This in contrary with the particle size analyzers and also because those instruments are more expensive.

The facts in short:

1. The Globulyser can prevent the oiling off-process in milk and milkproducts.
2. This instrument may prevent quality claims from supermarkets or other customers.

3. There is a correlation of (R_2) 0,995 between the pressure of the homogenizer and the values of the Globulyser
4. Measures as well as vegetable fat as milk fat.
5. The measuring takes only a few minutes with direct result.
6. The Globulyser can reduce the revisioncosts of the homogenizer(s)
7. The Globulyser can reduce energy costs of the homogenizer.
8. Globulyser gives a correlation (R_2) of 0,97/0,98 between the homogenization degree and the free fat percentage in the milkpowder.
9. The Babyfood- and chocolate industry are interested in measuring free fat in milkpowder.
10. The precision of the instrument varies between the 2% and 4 %, depending on the product quality.
11. The Globulyser measurement span is between 0 micron and 3.0 micron, comparable or better than particle size analyzers.
12. The measurement is completely controlled by the instrument, so it is operator independent.
13. There are no special skills needed for operation of the Globulyser.
14. The Globulyser can get connected to an ICT-connection as well as a printer.
15. High quality precision instrument for a low price.