

Long term calibration standards for raw milk Data sheet and certificate of quality (Rev.: 05/12/2007)

Data sheet of the materials : production september 2007; best before: September 2010

Prod. Nr.		Fat (Röse-Gottlieb) (g/100g = %)	Protein (Kjeldahl) (g/100g = %)	Lactose (Monohydrat:e. enzym.) (g/100g = %)	Freezing point (Cryoscopy) (°C)	Urea (pH-Differential; Skalar; enzym.) (mg/l)	pH	Drymatter (Sea sand) (g/100g = %)	Intended use
F 1	Reference value and uncertainty *	2,341 +/- 0,006				140,3 +/- 7,6			Slope for fat and urea
	Range of variation (95%) **	0,006				6,08			
	Confidence interval ***; number of single results	0,003; 24				7,60; 12			
F 2	Reference value and uncertainty *	3,327 +/- 0,005				422,9 +/- 14,0			Slope for fat and urea
	Range of variation (95%) **	0,005				7,34			
	Confidence interval ***; number of single results	0,005; 24				14,00; 12			
F 3	Reference value and uncertainty *	4,220 +/- 0,008	3,468 +/- 0,010	4,742 +/- 0,035	-0,5201 +/- 0,0027	238,4 +/- 3,4	6,66 +/- 0,013	13,10 +/- 0,06	Intercept for fat, protein, lactose, freezing point, urea, pH and dry matter Slope for fat Multi parameter standard
	Range of variation (95%) **	0,008	0,010	0,010	0,0009	3,38	0,013	0,018	
	Confidence interval ***; number of single results	0,005; 24	0,007; 24	0,035; 24	0,0006; 40	2,75; 9	0,006; 10	0,062; 12	
F 4	Reference value and uncertainty *	5,497 +/- 0,011				228,7 +/- 8,9			Slope for fat and urea
	Range of variation (95%) **	0,011				4,21			
	Confidence interval ***; number of single results	0,006; 24				8,93; 12			

GENERAL INFORMATION ON THE MATERIALS

Shock frozen raw milk, minimum 40 ml per packaging unit.

PACKAGING

Screw capped plastic bottles for direct use in IR instruments or direct pipetting.

BASIS OF REFERENCE VALUES

Reference values and uncertainty *

Reference values are established on the basis of corresponding statistical data. Uncertainty is established by taking into account both the confidence interval from interlaboratory data and the homogeneity between packaging units. The higher of the two values was chosen.

Homogeneity between packaging units **

To estimate homogeneity between bottles obtained by the homogenizing and dispensing procedure applied, single determinations from 10 bottles and a 10 fold determination from one bottle were carried out using FTIR measurement.

Interlaboratory characterization of reference values ***

Mean and confidence interval; number of single results. Results were obtained from up to 8 laboratories each working under repeatability conditions.

ADVICE HOW TO USE

The materials are suitable for calibration in IR analysis of raw milk. They have been in use at the laboratories of Milchprüfung Bayern, whereby a substantial improvement of accuracy and stability of calibration has been achieved.

Due to the long term stability and exact characterization these materials are best for comparison and statistical control in reference analysis, too.

The materials must be stored, warmed up and used according to the following procedure:

- When receiving the materials check first if they are still completely frozen. If this is not the case materials must be used immediately. It is not possible to freeze them again. If they are still completely frozen they can also be stored. Storage temperature must be below -20°C .
- At the day of analysis materials must be warmed up to 40°C and gently mixed prior to analysis. In case you'd find a pellet on the bottom of the bottle, try to solve it. We recommend to place them for 35 – 40 minutes into a water bath set a temperature between 41 and 43°C . After that analysis can be started according to the laboratory's method. If the method prescribes a measurement at 20°C , the necessary cooling shall proceed slowly at an ambient temperature of 20°C . In no way materials shall be cooled down in an ice bath.
- The samples are only for laboratory usage and not for human consumption.

Stability

The materials are kept under regular control during storage at a temperature below -20°C . After storage at this temperature it is best before, see description of material.

Reference values and their uncertainties are guaranteed under the precondition that the material is stored, warmed up and used as described above.

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