



BUCHI NIR Applications Milk & Dairy

You need fast and reliable information about your samples in order to make far-reaching decisions. We support you in overcoming your daily challenges, from incoming goods inspection to finished product release, with more than 15 years experience in supplying laboratory and at-line NIR analytical solutions for milk and dairy industry.





NIR Pre-calibrated applications Milk & Dairy Industry

Your most important benefits

Time savings

- Shorter time to routine use. Measure parameters such as moisture, fat, protein, lactose and much more from day one
- Measure all parameters simultaneously
- Control the value chain at each critical point, from incoming goods to finished product release

Reliability

- Deliver the same accuracy in the production as in the laboratory
- Get accurate results from a robust spectral database spanning geographical and seasonal variations

Precision and accuracy

- Our NIR technology provides unparalleled measurement reproducibility and spectrometer performance
- Intimate knowledge and experience with reference methods like Kjeldahl, Dumas and Extraction have been implemented into applications development

Your «NIRSolutions Laboratory»



Based on our NIRFlex® N-500 spectrometer

- Flexible, with various measurement cells and add-ons to accommodate any sample matrix

Your «NIRSolutions At-line»



Based on our NIRMaster™ spectrometer

- Hygienic, representative sampling
- Practical, ingress-protected design
- Simple operator interface

“BUCHI NIRSolution convince us for quality of fast screening solution provided as well as for the quality of Service support.”

Fromagers de Thiérache Quality Control



Milk

Pre-calibrated application	Milk transfectance N555-509	Milk flow cell**
Dry matter [%]	7.8 – 15.5*	11.5 – 13.2
Fat [%]	0.05 – 9.80*	1.99 – 6.85
Protein [%]	1.1 – 6.5*	2.9 – 3.6
Lactose [%]	0.08 – 5.50**	4.22 – 4.98
Saturated fatty acids [%]	0.03 – 4.68**	
Mono+ Poly unsaturated fatty acids [%]	0.01 – 2.34**	
Casein		2.3 – 3.1
Sample compatibility	Homogenized milk measured with sample cup in transfectance mode	Raw milk measured after homogenization with flow cell in transfectance mode



Dairy products - I

Product	Yogurt and fresh cheese N555-505	Hard, semi-hard and soft cheese N555-507	Processed cheese N555-506
Moisture [%]	14.6 – 93.5*	26.6 – 68.4*	
Moisture in fat-free cheese [%]		39.7 – 90.0**	
Dry matter [%]			44.1 – 61.0*
Fat [%]	0.02 – 48.60*	6.2 – 37.5*	
Fat in dry matter [%]		13.6 – 72.7**	41.2 – 48.9*
Protein [%]	0.4 – 19.1*	4.5 – 51.1*	
Lactose [%]	0.03 – 4.30**		
Total sugar [%]	0.6 – 54.9*	0.3 – 7.4**	
Ash [%]	0.2 – 2.0*	0.8 – 18.1**	
pH	4.1 – 6.3*	4.1 – 6.4**	5.6 – 6.0*
Salt [%]	0.04 – 1.99**	0.1 – 4.0*	1.6 – 2.3*
Sample compatibility	Yoghurt, quark, sour cream, fresh cheeses, mascarpone measured with sample cup in diffuse reflectance mode	Cheeses like Emmental, Gruyeres, St. Paulin, Raclette, Appenzell, Tilsiter and cream cheese measured with sample cup in diffuse reflectance mode	Processed cheese measured with sample cup in diffuse reflectance mode

* BUCHI Pre-calibrations; ** Pre-calibrations in development

If not indicated otherwise, the pre-calibrations listed are compatible with both the NIRFlex® Solids and the NIRMasteR™ spectrometers



Dairy products - II

Product	Butter**	Milk creams transflectance**	Milk powders**
Moisture [%]	11.3 – 23.8		1.4 – 7.9
Dry matter [%]		17.5 – 50.9	
Fat [%]	74.5 – 88.4	7.5 – 46.0	0.1 – 33.0
Protein [%]		2.0 – 4.5	1.7 – 91.2
Lactose [%]			36.5 – 55.0
Ash [%]			2.0 – 8.5
pH	3.7 – 7.1		
Salt [%]	0.03 – 2.60		
Sample compatibility	Butter measured with sample cup in diffuse reflectance mode	Milk-based creams measured with sample cup in transflectance mode	Full and skimmed milk powder, whey powder measured with sample cup in diffuse reflectance mode

*BUCHI Pre-calibrations; **Pre-calibrations in development

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For more information please contact your local BUCHI representative.

www.buchi.com/worldwide



**NIRFlex®
N-500**
Versatile laboratory
FT-NIR spectrometer



**NIRMaste™
IP54**
FT-NIR spectroscopy
with ingress protection



**NIRMaste™
Pro IP65**
FT-NIR spectroscopy
with maximum
protection



**LIMS Software
Interface**
Automated result data
management

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