



Application Note # AN-277E FT-NIR Analysis of Liquid Milk Products

Liquid milk products like whey, cream, whey concentrates, lactose concentrates and other products can easily be analyzed with FT-NIR spectroscopy.

In the past NIR was used in routine exclusively for analyzing finished milk products like milk powder cheese and yoghurt. Recently more and more interest is shown in the analysis of milk and liquid milk products by NIR in order to utilize only one instrument in the laboratory for all kind of samples.

The liquid samples are measured in transmission with a pathlength of 1 mm. This large pathlength, compared to mid-IR spectroscopy allows even the analysis of unhomogenized liquid dairy products.



Calibration Results:

Whey

- Fat 0.0 - 0.4 ± 0.01 %
- Protein 0.5 - 1.1 ± 0.03 %
- Total solids 3.6 - 6.9 ± 0.04 %

Whey concentrate

- Fat 0.2 - 0.5 ± 0.02 %
- Total solids 25.6 - 38.2 ± 0.15 %

Whey protein concentrate (WPC)

- Total solids 1.8 - 2.5 ± 0.04 %
- Protein 22.4 - 24.9 ± 0.13 %

Whey cream and cream

- Fat 7.2 - 53.9 ± 0.5 %

Lactose Concentrate

- Total solids 15.4 - 20.5 ± 0.2 %

Condensed Milk

- Fat 4.0 - 10.2 ± 0.05 %
- Total solids 21.8 - 33.7 ± 0.35 %

Milk Drinks

- Fat 0.2 - 8.1 ± 0.08 %
- Total solids 7.0 - 15.0 ± 0.14 %

Bruker Optics can look back on 30 years of experience in developing and producing optical spectrometers. Our experience is your benefit:

Application Support

Bruker Optics is staffed by scientists and engineers that have an in-depth knowledge of instrumentation and applications. Our product specialists are available to assist you with method development either remotely or in your lab. FT-NIR application specialists will assist you in the selection and use of sampling accessories, choice of optical components and software operation. We offer customized instruction and support packages to fit your needs.

Service and Maintenance

Bruker spectrometers are intended to provide years of trouble-free operation, but should a problem occur a network of Bruker companies and representatives around the world are ready to respond to your needs. Professional installations and a high standard of post-delivery service are commitments Bruker makes to each of its customers.

Training

Customer training courses are held on a regular basis for the benefit of the FT-NIR instrument users. Both technical and software (e.g. OPUS/IR, IDENT, QUANT) practice seminars are offered. Customized on-site training is also available from our staff of FT-NIR specialists.



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