

Information Flyers

Chemical 13 February 2002

Moisture Analysis on Powders and Tablets and Contactless Weighing of Powders and Tablets

Advantages of *the minispec* Method

- Fast
- Accurate
- Solvent free
- Measurement by untrained personnel
- Non destructive:
- Possibility of repeatable measurements
- Product quality remains unchanged
- Powders can be analyzed without removing from glass bottle
- No long drying procedure necessary to determine the moisture content

Typical Samples

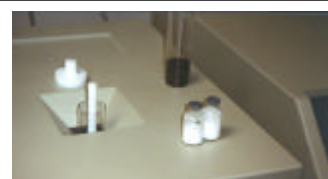
- Pharmaceutical Powders
- All types of tablets
- Chemical Powders
- Cosmetic Powders



Primary Calibration

A typical minispec application detects NMR signals from its measured sample, it then calculates the application's result from this signal. In some cases, the result can be directly calculated from the measured signal (e.g. a relaxation time). On the other hand, minispec applications use the reference method to determine a sample property (e.g. oil, water or fat content) from the NMR signal. The consequence is, that one has to calibrate the NMR signal **once** against samples with known contents.

The great advantage of this approach is that the calibrated data includes intrinsic effects of the product class and it results in a high precision and reproducibility of the analysis.



Powders can be analysed without removing from their glass bottles.

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The screenshot shows the Bruker minispec software interface. At the top, it displays 'Sample # 36: 76.320 %'. Below this is a graph showing Intensity [%] on the y-axis (ranging from -100 to 100) and time [ms] on the x-axis (ranging from 0 to 5). To the right of the graph is a table listing sample data:

Sample #	SFC %
3	75.204 %
4	74.918 %
5	75.204 %
6	75.422 %
7	75.101 %
8	75.009 %
9	74.973 %

Below the graph is a table with columns: RunningNo, SampleID, DateTime, SFC%, Operator, and Remarks. The table contains 9 rows of data. At the bottom of the interface are large buttons for 'Measuring', 'Calibrate', 'Continue', and 'Stop', along with a status bar showing 'Measuring Sample 'the minispec''.

The software is adjusted to the special needs of the application field. Large buttons are used for starting and stopping of measurements and calibrations. These are on the lower part of the screen. The handling is intuitive and the user is guided with clear messages through the application.

Further Applications

- Relaxation time analysis of contrast agents
- Oils and moisture content in other chemical products
- Droplet Size Distribution Determinations
- Water Binding Studies

Recommended Hardware

- The minispec mq 10
- Probe mq-PA 103

