

## Application Note AN # 97

# ALPHA FT-IR-Wine Analyzer

Explore a new way of controlling the quality of your wine. With the ALPHA wine analyzer from Bruker you can determine numerous quality related wine parameters such as the alcohol, acid, and sugar content in a fast and reliable manner. Since no reagents or consumables are needed the method is very cost effective.

- Simultaneous analysis of different parameters with one measurement.
- Reliable measurement results due to robust ATR measurement technique.
- Extensive calibrations for the analysis of finished wines.
- Unrestricted access to set up new calibration data-bases.
- Easy to use.
- Space saving and portable.
- Low maintenance and low cost of operation.
- Fully automated measurement with optional autosampler.



Figure 1: ALPHA-P wine-analyzer with flow through cell

The wine-sample is analyzed by utilizing the so called ATR measurement technique. The robust ATR diamond crystal allows measurements without sample preparation and guarantees precise and reproducible analysis results.

The measurement can be performed manually or for a higher sample throughput fully automated with an optionally available autosampler.

The wine analyzer is based on the well-proven, robust and space saving ALPHA FT-IR spectrometer from Bruker (figure 1).

Due to its easy to use hard- and software the wine-analyzer can also be operated by inexperienced personnel. Because the user is guided through the analysis process with the aid of a special software-wizard (figure 2), operating errors are almost completely ruled out.

The manual measurement of a sample with the wine-wizard is really simple and takes only a few steps. After injection of the sample into the flow-through cell the measurement button is pressed.

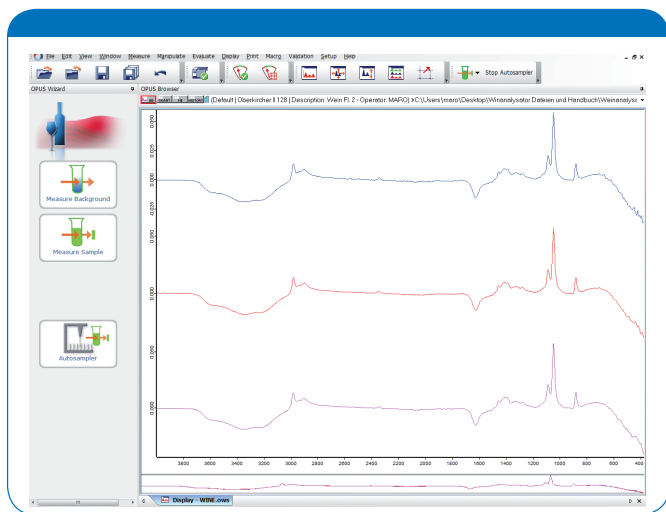


Figure 2: User interface of the ALPHA wine analyzer

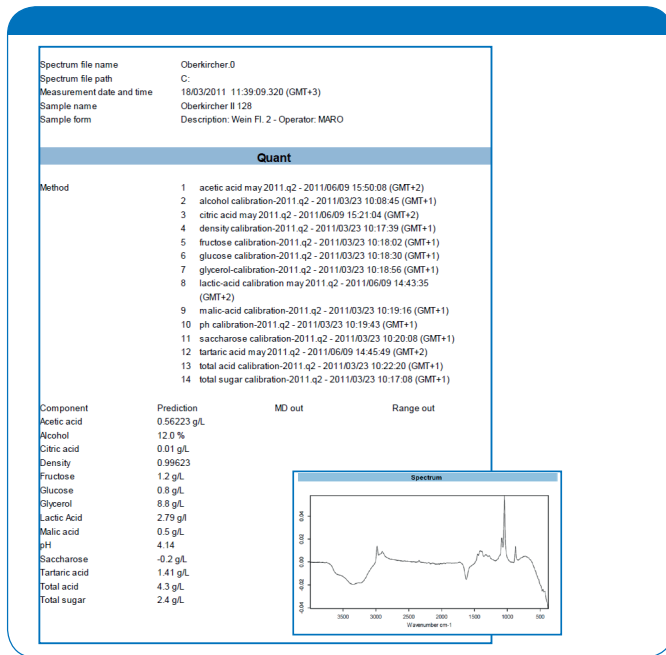


Figure 3: PDF-report of the analysis result.

Measurement and analysis are then performed fully automatically within less than five minutes. The cleaning of the cell is done by a simple water injection. The analysis result is shown on the display and additionally a detailed measurement report is created (pdf and/or csv format, figure 3).

The ALPHA Wine Analyzer comes with a starter calibration that was assembled by the accredited (DAkkS) Institute Heidger (Kesten, Germany). The calibration is based on more than 1700 wines from all important wine producing regions in all over the world. This database can be expanded with your wine-spectra and reference values in order to optimize it for your specific needs. It is also possible to create your own calibrations. With the starter-calibration you can analyze the following wine-parameters:

- Alcohol
- Density
- Fructose
- Glucose
- Saccharose
- Total sugar
- Total acid
- pH
- Glycerol
- Acetic acid
- Citric acid
- Lactic acid
- Malic acid
- Tartaric acid

### To sum it up:

With the ALPHA wine analyzer you are able to reliably monitor the ripening process and quality of your wine at any time.

Several parameters that are crucial for wine-making are acquired in parallel with one single measurement.

An extensive starter-calibration is available and can be adapted to specific demands. It is possible to expand and optimize the calibration database as well as to add new calibration parameters.