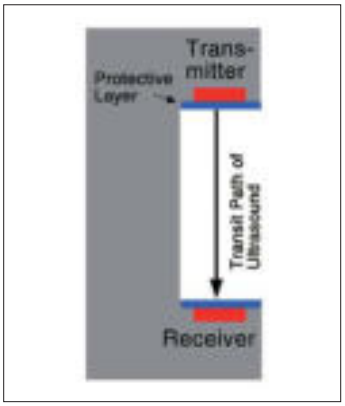
ECHOMETER 1076 K
Determination of Concentration for Liquid Mixtures

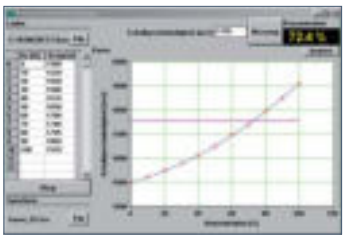
KARL DEUTSCH

ECHOMETER 1076 K
Using the sound velocity to determine the concentration of liquid mixtures

Delivery in a handy carrying case containing the probe, PC software tool **KonzBest**, temperature meter **Checktemp**, 250 ml fully desalinated water, two beekers and the instruction manual



Principle sketch of the special probe: Transmitter and receiver units are covered with a protective layer which is short-time resistant against aggressive outside influences



User interface of the PC software tool **KonzBest**: Example of a support curve for easy determination of the concentration of a liquid by means of a measured sound velocity

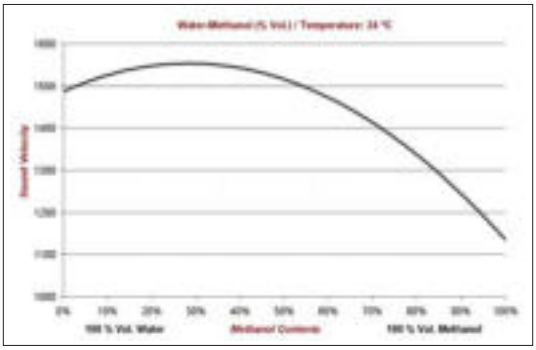
Simply submerge the special probe into the liquid, measure the sound velocity and read the assigned concentration off the calibration curve.

The sound velocity of a material is a constant which differs in its magnitude with each chemical compound. With compounds made from two substances the sound velocity of the system changes characteristically in dependence of the composition.

If the concentration dependency is known (for instance, priorly determined as a curve of measured values by means of calibration measurements) the given composition of the binary blend can be determined by means of a measurement of sound velocity.

The correlation between sound velocity and concentration is influenced by the temperature. If the sound velocity is used to determine the concentration at various temperatures, and if the temperature coefficient of the mixture is unknown, you need to acquire a new calibration curve for each temperature. The temperature meter **Checktemp**, which is part of the delivery, assists you in doing so.

The Windows® tool **KonzBest**, which is included in the delivery, simplifies the acquisition of calibration curves: The readings become connected by means of curve fitting and then shown on the screen.



The interdependency of concentration and sound velocity using the example of the mixture Methanol and water

The gauge, for example, is ideally suited for use in the field of quality assurance of chemical products, where the consistent concentration of liquid mixtures is essential.

At a glance:
Further benefits of the ECHOMETER 1076 K

- Files and folders data handling like working with a regular computer
- Data interface for PC connection
- Two selectable display options: standard display and difference value
- Measured value display can be selected from resolutions 0.01 m/s, 0.1 m/s, 1 m/s or 1 Inch/µs
- Limit monitoring
- Battery saving mode
- Integrated support frame
- Splash-proof housing (IP 54)

Technical Data ECHOMETER 1076 K	
Display	52 mm × 27 mm approx., illuminated
Measurand	Sound velocity
Measuring range	100 m/s to 19999 m/s
Memory	Up to 9999 readings, can be structured into files with up to 999 readings each
Units	m/s, Inch/µs (selectable)
Power supply	2 pcs. alkali-manganese batteries (130 h approx. operating time) or 2 pcs. NiMH batteries (65 h approx. operating time in new condition), type AA/IEC R6
Battery check	4-stage battery level indicator, automatic battery switch-off
Size, weight	131 mm × 81 mm × 32 mm approx., 175 g (incl. batteries, w/o protective rubber holster)

Leaflet P 1076 K e 06_11 · Subject to change without notice · Printed in Germany 06/11 · 7499.P1076K.EN.0611

KARL DEUTSCH Prüf- und Messgerätebau GmbH + Co KG
Otto-Hausmann-Ring 101 · D-42115 Wuppertal · Germany
Phone (+49 -202) 7192-0 · Fax (+49 -202) 7149 32
info@karldeutsch.de · www.karldeutsch.de

DIN EN ISO 9001 certified

KARL DEUTSCH