



Polarimetric Quality Control of Essential Oils

The optical rotation of essential oils is a quickly measured, easily generated polarimetric quality parameter. Moreover, it helps to differentiate between different essential oils and to analyze the purity of essential oils.

Protect the healing energy of your essential oils

Essential oils such as lemon or orange oil are also referred to as volatile oils, and are often obtained by distillation. They are concentrated hydrophobic liquids that obtain essential aroma compounds from plants.

Essential oils consist of many different compounds that are mostly optically active. Their varying composition allows for them to be characterized by measuring the optical rotation. These measurements can also provide insight into the quality and the purity of essential oils, as any change in their optimal composition will affect the optical rotation.

International pharmacopoeias, such as the US and the European pharmacopoeias, demand the determination of the optical rotation of a variety of essential oils, generally at 25 °C and 20 °C, respectively.

The MCP 100 modular and compact

The new MCP 100 contains the proven technology of Anton Paar in a greatly reduced footprint. It is ideal for analyzing the quality of optically active substances used in the flavor and fragrance industry.

- **Temperature control:** Accurate polarimetric measurements demand precise temperature control. The MCP 100 is equipped with a Peltier element which provides a temperature stability of +/- 0.2 °C.
- **Convenient:** Measured data is automatically saved and can easily be exported to a printer, server or USB.
- **Reliable:** Compliance with national and international pharmacopoeias
- **Safe:** No manual data input as automatic adjustments and calibrations are done with Toolmaster quartz control plates.
- **All samples:** Sample cells in the range of 2.5 mm to 1 dm allow the measurement of dark samples without diluting. Cells made out of Hastelloy B3 are resistant against concentrated acids up to 35 % HCl.



Good to know

The optical rotation and concentration measurement of essential oils can quickly be done with an MCP polarimeter. It can therefore provide insight as to their quality.

Other Anton Paar instruments relevant for the application

The MCP family contains a variety of models with unique features that can offer an ideal solution to every customer. The Abbemat refractometers are ideal for determining the refractive index of essential oils.



Do you have any questions?

Contact Anton Paar directly:

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