

# Polarimeter



## Polarimetric identification of the ISOMALT concentration

### What is ISOMALT

ISOMALT is a disaccharide consisting of two sugar types (glucose and mannitol). It is a white crystalline odourless substance containing approx. 5 % water of crystallisation.

### Use of ISOMALT

ISOMALT is a very tasty sugar-free sweetener with a much lower energy content compared to saccharose (sugar). It is won in a chemical reaction from sugar. In the alimentary production it substitutes sugar in a ratio of 1:1. Products being produced with ISOMALT do not differ in consistency or appearance from products being produced with sugar. Its advantages for health as well as its stability regarding heat and acids turns ISOMALT into a valuable and multi-purpose raw material für various reduced-calorie alimentary products as well as medicines.

### Method

ISOMALT is a sugar alcohol which belongs to the optically active materials due to its molecular structure. Dissolved in water, the concentration of ISOMALT can be identified in a quick, reliable and non-destructive way in a Polarimeter.

**Specific rotation ISOMALT:  $[\alpha] = + 91,5^\circ$  (at 20°C and 589 nm)**

The calculation/identification of the ISOMALT concentration contains, among the measured value of the Polarimeter, the length of the used measuring tube, the concentration of the solution and the DN (dry substance content).

$$\text{Conc ISOMALT} = \frac{\alpha * l}{\text{DN} * 2 * c}$$

- $\alpha$  optical rotation of the sample
- DN dry substance content
- c concentration
- L length of the measuring tube

This constitutes an additional effort for the laboratory staff because the measured value of the Polarimeter has to be converted into the concentration of ISOMALT, usually in a manual way.

**Schmidt+Haensch Polarimeter** is now available with a so-called ISOMALT method. The formula for the calculation of the concentration is included in the device. In case the values „concentration of solution“ and „dry substance content“ change for the samples to be measured, they can be entered anew quickly and reliably via „Hotkey“ on the keyboard of the Polarimeter before each measuring.

**Advantages:**

- ==> **time saving**
- ==> **error control**

**Recommended Polarimeter**

==> **Schmidt+Haensch Polarimeter of the series Unipol L**



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