

# PermMate

## Data sheet **Preliminary**

### Finished Package Oxygen Permeation System

- Package testing with superb oxygen analysing, volume control and package volume measuring



#### **Introduction to the PermMate**

PermMate is a new Package Permeability Tester, which is able to test the permeability of all types of finished packages and bottles.

PermMate is a tester for sealed packages. PermMate is able to test the Oxygen Transmission Rate (OTR) at different test conditions (e.g. temperature and humidity) and it determines all types of packages (e.g. flexible packages, rigid packages and bottles).

By developing PermMate we are meeting a need for permeability testing of finished packages. The permeability and the barrier qualities of a foil often change when it is shaped into a finished package. As a result, the shelf life of the product is often altered.

PBI-Dansensor has developed a product, which can be used together with our spot test gas analyser CheckMate II. CheckMate II gives a fast, reliable and well-documented feedback when measuring O<sub>2</sub> in MAP packages.

#### **Features**

- New patented innovative concept of measuring
- Test of numerous packages
- Non stress volume tests
- Full statistics
- Full data logging and traceability
- Full self diagnostics
- Full package volume control
- Bar code handling of numerous packages (optional)
- Package volume measuring
- Versatile Research & Development product
- Full product flexibility
- Very small sample volume
- Fast response time
- Product shelf life prediction

#### **Numerous packages at one time**

PermMate is based on an innovative concept, which means that it is able to test numerous packages at one time. The normal limitations of comparable products are 1-6 packages.

 **PBI Dansensor**

Lyssy Line of Permeability Testers

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The PermMate and CheckMate II are controlled via a PC program, which makes it easy to perform various tests. An additional feature of PermMate is the ability to determine the volume of the packages to be tested - an important factor influencing the OTR of the package. Knowing the volume of the finished packages can be a valuable tool in monitoring the total gas consumption during production and can provide documentation of volume for transportation requirements.

### Directly connection to PC and statistics

PermMate is supplied with PC interface and software, which make it possible to make full data logging, statistics as well as to generate measuring reports. The software program is therefore divided into a product, test, measuring, report, statistics, and system menu.

A unique PermMate feature is the fact that in an easy and secure way the product is capable of keeping track of numerous packages by means of an optional bar code printer and a bar code scanner, which are handled from the product software. This means that the product is developed to comply with various standards of quality for handling and collecting of data.

### Applications and users

PermMate has a wide appeal:

- Test laboratories (consultancy companies)
- Packaging producers, film and food producers and breweries.
- Medical and packaging machine producers
- Universities and institutes

### A versatile product

PermMate is based on a new innovative concept of measuring, which tests numerous packages. The product offers non-stress volume tests and an easy to use software interface. Furthermore PermMate offers full statistics and self-diagnostics, very small sample volume, fast response time and the ability to predict shelf life.

### Technical specifications

PermMate is operating together with CheckMate II. Please see the CheckMate II data sheet for more specifications.

General description	
<b>Dimensions:</b>	
PermMate single:	70x200x190 mm (HxWxD)
PermMate with CheckMate II:	260x280x190 mm (HxWxD)
<b>Weight:</b>	
PermMate single:	Approx. 4 Kg
PermMate with CheckMate II:	Approx. 8 Kg
<b>Voltage:</b>	90-260 VAC, 50-60 Hz. Max. 60 W
Flushing	
<b>Flow:</b>	300 mL/min. approx.
<b>Lower flushing limit:</b>	0.05% O <sub>2</sub>
<b>Max volume change over time:</b>	+/- 1 ml/min.
<b>Typical flushing time:</b> (Package of 2 L. from 80% O <sub>2</sub> )	45 min.
<b>Typical flushing time:</b> (Package of 1/2 L. from 20.9% O <sub>2</sub> )	8 min.
<b>Gas:</b>	Nitrogen 5.0, UHP white spot, or other gas with less than 0.01% O <sub>2</sub> . Low Hydrocarbon, H <sub>2</sub> and CO content.
Volume control	
<b>Accuracy when dosing:</b>	< +/- 1 mL
<b>Accuracy when withdrawing:</b>	< +/- 1 mL
Volume determination	
<b>Accuracy:</b>	Plus/minus 5% relative.
Permeability measurements	
Expected minimum time for a 1/2 L package with an AOIR of 0.001 mL/Pck/dy = 25 days. Expected minimum time for a 1/2 L package with an AOIR of 0.1 mL/Pck/dy = 6 hours Note. Time is proportional to the volume. Double volume - double time	
<b>Accuracy:</b>	To be decided.
<b>Measurement:</b>	Plus-minus 1 % relative.

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