

OpTech[®] - O₂ Platinum



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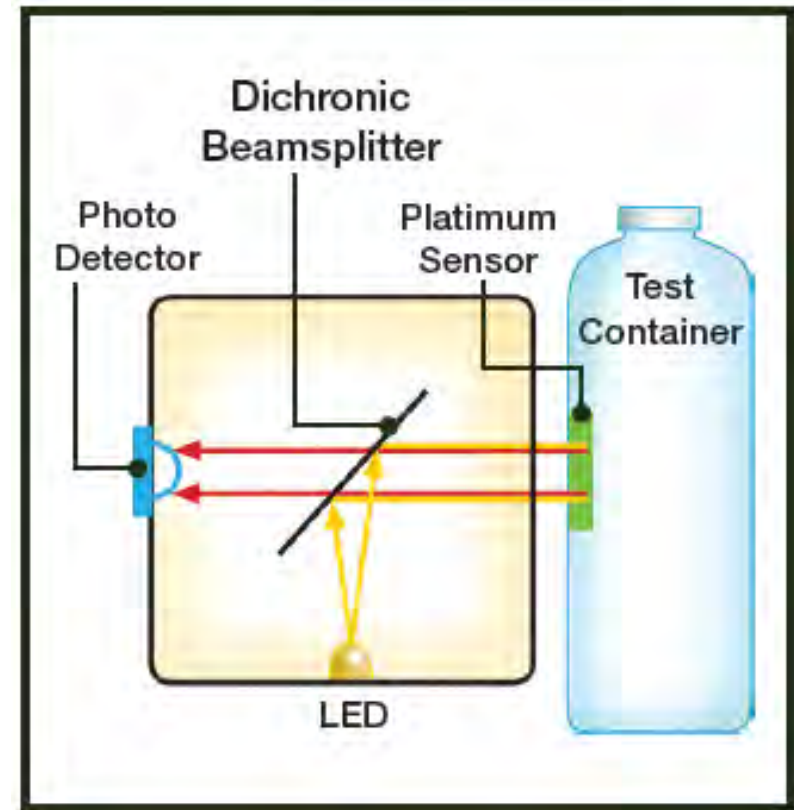
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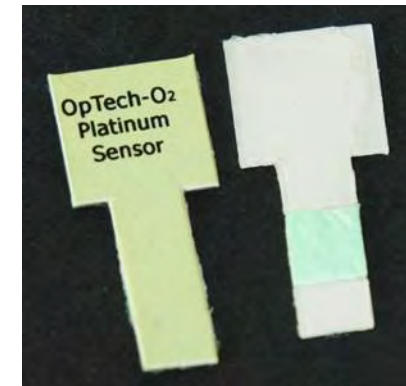
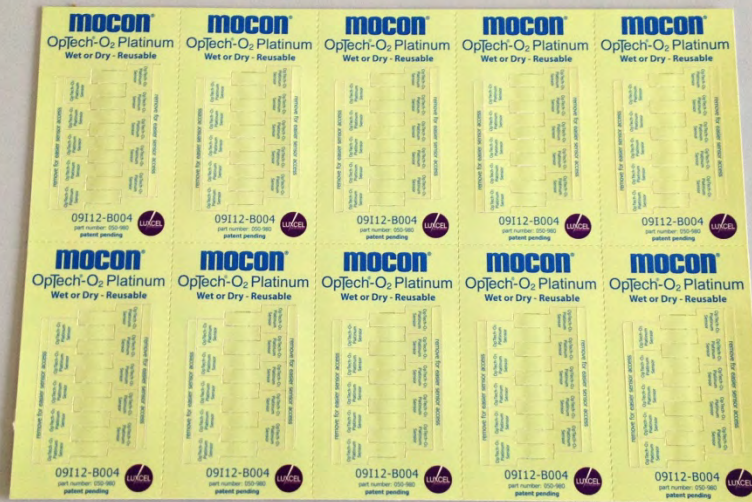
What is it?

- Optical Oxygen Detector
- Uses a Confocal optical system
- Platinum sensor chemistry

Working Principle



Sensors



Sensors

- Reusable and non Reusable (for liquid application) available
 - Self adhesive
- Activated by Amber light and not by UV-light
- Platinum Sensor is stabil in ambient conditions
 - Lifetime of 1 year or longer

Applications



Applications



Useful Accessories



Useful Accessories: Needle



Useful Accessories: Needle



Useful Accessories: ImPULSE



Useful Accessories: ImPULSE



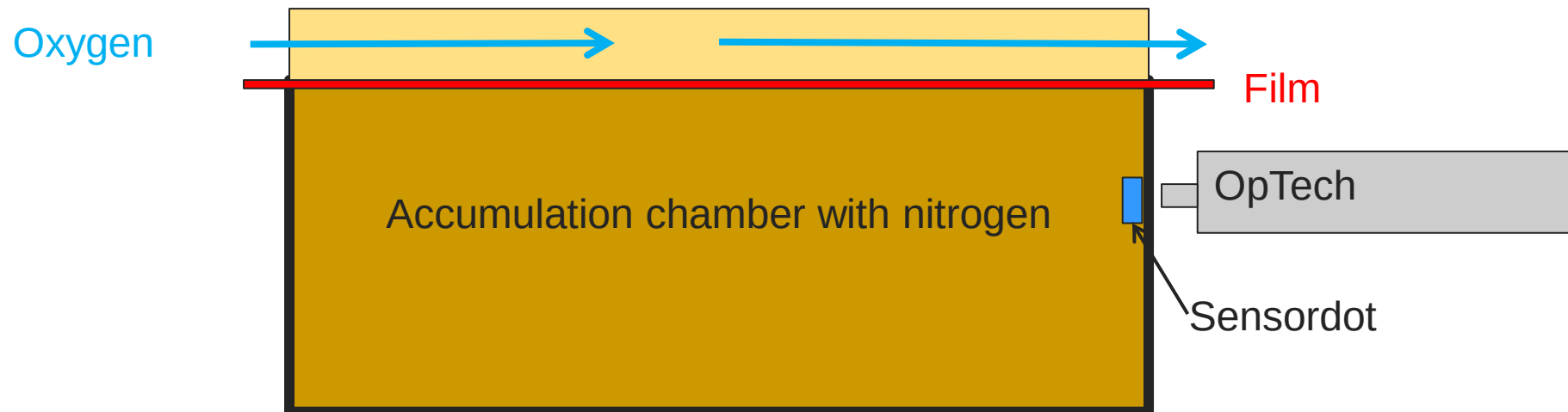
Useful Accessories: Vacuum Pen



Useful Accessories: Remote Cells



Useful Accessories: Remote Cells



Useful Accessories: Remote Cells

OxTran 2/10 to OpTech® Comparison

10

Test Conditions	OX-TRAN® 2/10 Results	OpTech® Results
Temperature	23C	25C
Permeant Concentration	100% Oxygen	20.86% Oxygen
Sample Area	50 cm ²	50 cm ²
Measured Transmission Rate	1939 cc/(m ² -day)	2.089 cc/day

1. Convert OpTech Results to cc/m²-day
 $2.089 \text{ cc/day} * 200 = 417.8 \text{ cc/(m}^2\text{-day)}$
2. Convert OpTech Results to 100% Oxygen Driving Force
 $100\%/20.86\% = 4.79$
 $4.79 * 417.8 \text{ cc/(m}^2\text{-day)} = 2001 \text{ cc/(m}^2\text{-day)}$
3. Compare Results: within 3.2%

Calibration

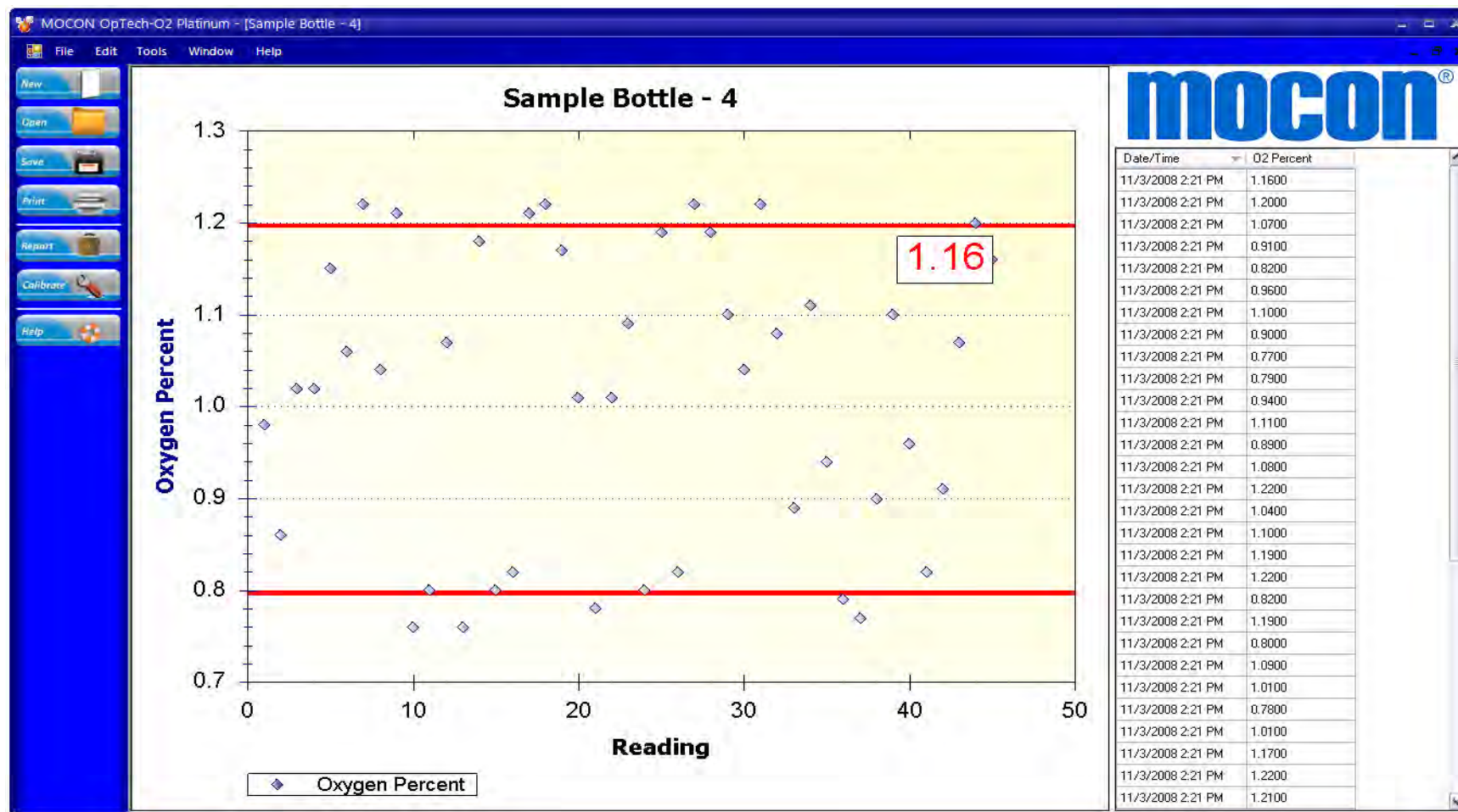


Software

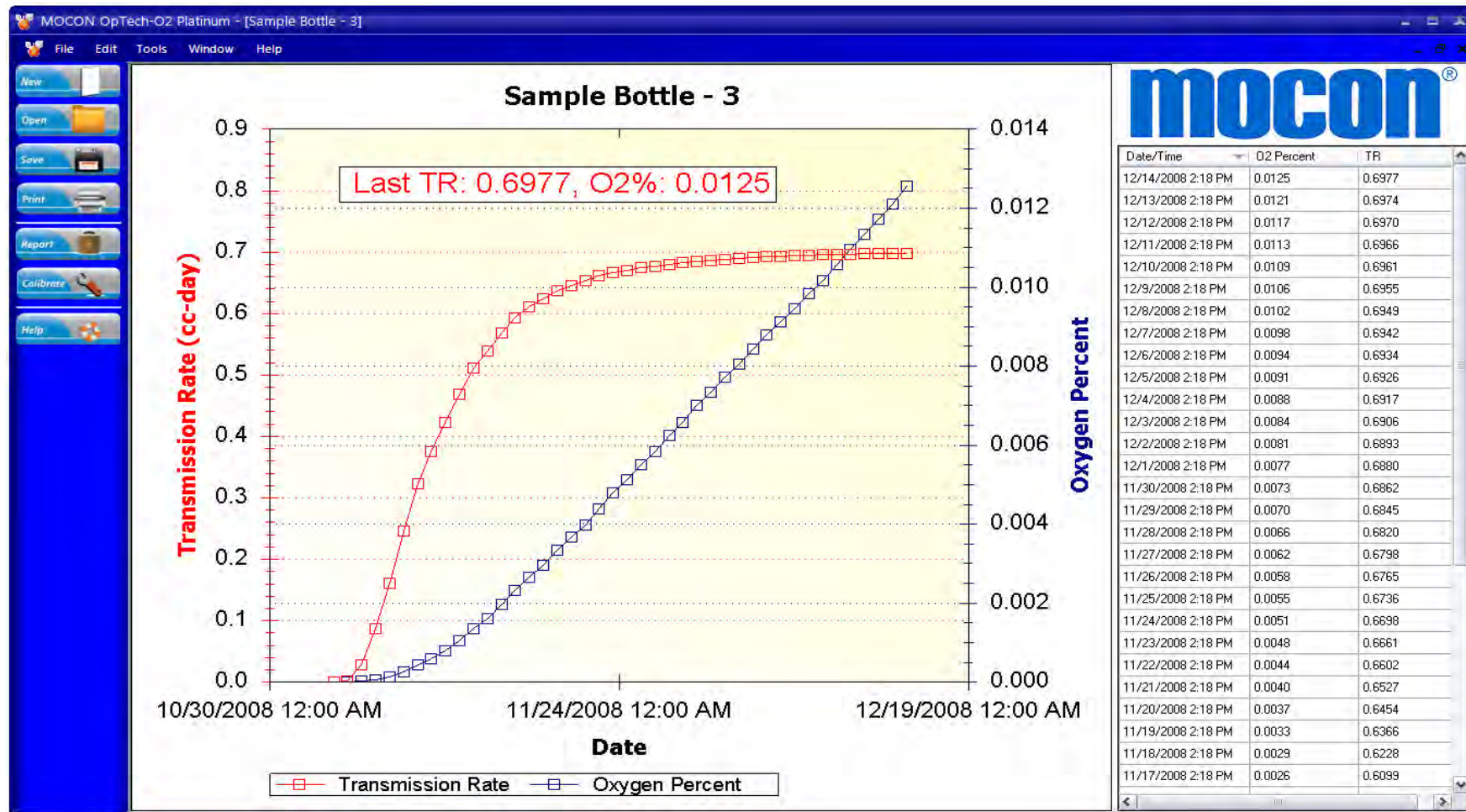
The image shows a 'Setup' dialog box from the Lippke software. It contains the following fields and controls:

- Sample ID:** A text input field.
- Material/Product Name:** A text input field.
- Test Type:** A group box containing four radio button options:
 - ☒ Permeation
 - ☐ Oxygen Leak
 - ☐ Headspace
 - ☐ Dissolved Oxygen
- Options:** A button located to the right of the Test Type group box.
- Hours Per Sample:** A numeric input field with a spinner, currently set to 24.
- Save:** A button at the bottom left.
- Cancel:** A button at the bottom right.

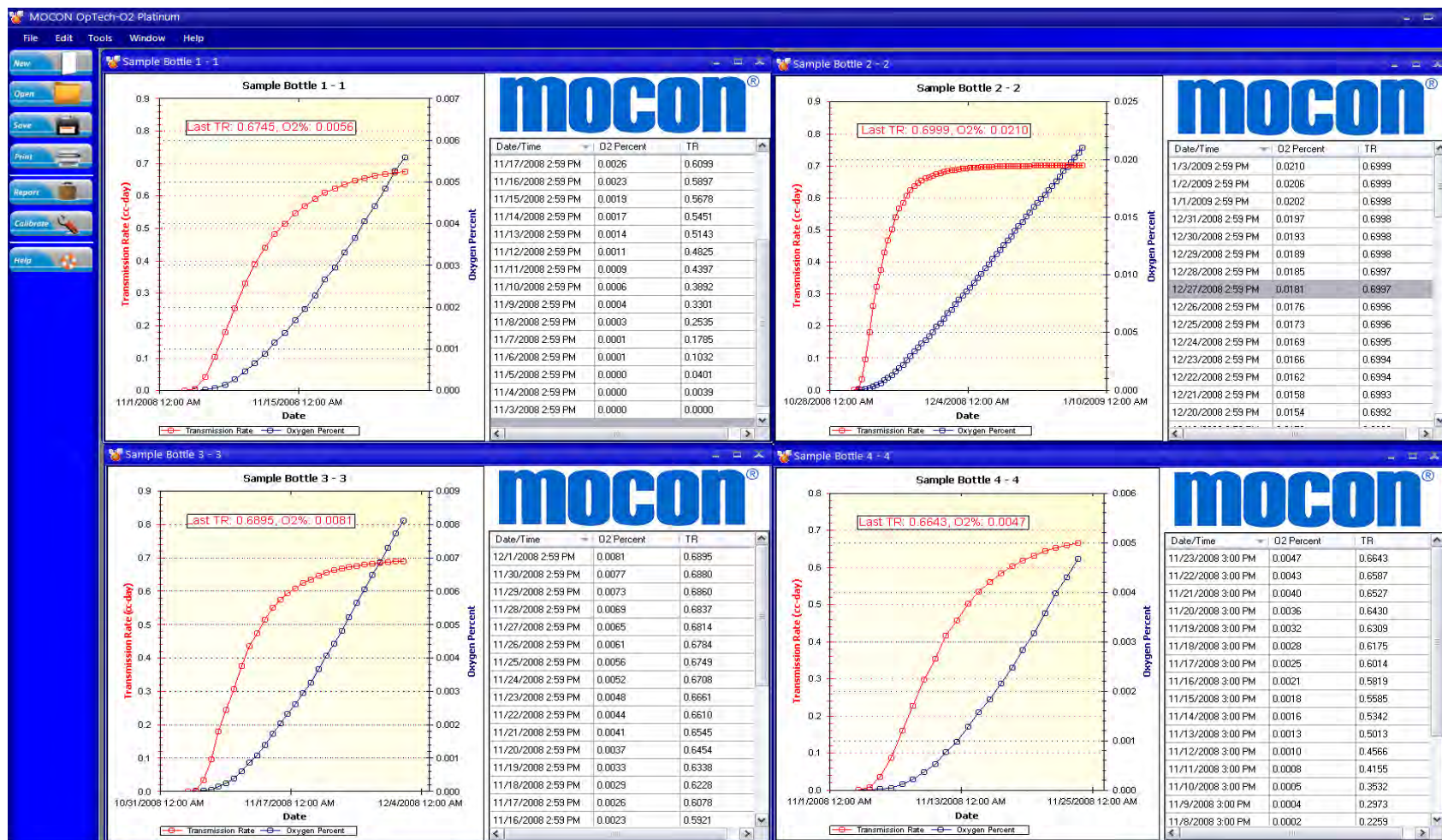
Software: Headspace Screen



Software: Permeation Screen



Software: Simultaneous Results



Benefits

- 3 different test modes offer a high flexibility of the module
- Non destructive head space analysing allow long time studies with just one package
- The Optech has no gas consumption. Packages with very small headspace can be tested now
- Tests of multiple samples with only one module save costs and time
- First module to measure OTR of porous packaging
- Capacity and Kinetics of scavenger can be tested

Specs

- **Test Ranges**
 - **Head Space:** 150 ppm – 25% O₂
 - **Permeation Measurement:** 1 – 10.000 cm³/m²/day
 - **Dissolved Oxygen:** 0,006 – 10 mg/l
- **Accuracy (of the CalCard):** +/- 0,0015 or +/- 1,5% whichever is greater
- **Repeatability**
 - **Sensor:** +/- 150 ppm or 3%
 - **Needle:** +/- 150 ppm or 2%
- **Operating temperature:** 5 - 40°C
- **Standard:** ASTM F 2714