

Non-destructive analysis of oxygen transmission rate of wine packaging



What is OTR measurement?

The AWRI has developed a method for directly measuring closure oxygen transmission rate (OTR) while it is in the bottle and in contact with wine. This method accurately measures the real OTR of closures that are influenced by contact with wine, such as those made from natural cork.

Packaging technologies such as bag-in-the-box can also be analysed non-destructively, for the OTR of the packaging.

Why is it important?

Since 1999, the AWRI has conducted several robust closure trials and these have shown that the evolution of white wine sensory characteristics post-bottling is driven primarily by the closure OTR. Over a defined shelf life:

- very low OTR values can lead to the development of reductive attributes in the wine if appropriate precursors are present;
- low OTR values lead to retention of fresh fruit characters;
- moderate OTR values can lead to the development of cooked and stewed fruit characters; and
- high OTR values can lead to significant oxidised characters developing.

To the AWRI's knowledge, traditional tools to quantify OTR, such as those using the MOCON technology, cannot characterise the oxygen transmission properties of wine packaging in contact with wine. In many packaging technologies this impacts on the values obtained, particularly in natural cork based closures.



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ANALYSIS

In a recent closure trial, the closure OTRs were determined by the new method. The high OTR closures correlated well with oxidised characters (honey, plastic, stone fruit) while the low OTR closures correlated with reduced characters (cabbage, struck flint, toasty).

What does the analysis cost?

The cost for the analysis is as follows:

- 1-3 samples - \$375/sample
- 4-7 samples - \$285/sample
- and 8+ samples - \$255/sample.

Prices are ex GST and a \$25 sample handling fee applies to each invoice.

Where can I find more information?

For further information on the AWRI's OTR method, please contact:

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