



# Sentia Wine Analyzer

How to get the best from your device and the free sulfur dioxide method

November 2021

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# Getting Started

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Now that you have your Sentia analyzer, there's a few important points to know before you start testing.

1. **Put your strips in the fridge immediately upon arrival-** Strips need to be stored between 2-8°C to stop degradation of the dried down reagents.
2. **Read your user manual-** It will tell you everything you need to know to test quickly and effectively.
3. **Turn on your Sentia analyzer and allow it to charge. Then, follow the prompts to connect to WiFi and register the analyzer to the Sentia server.**

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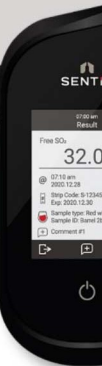
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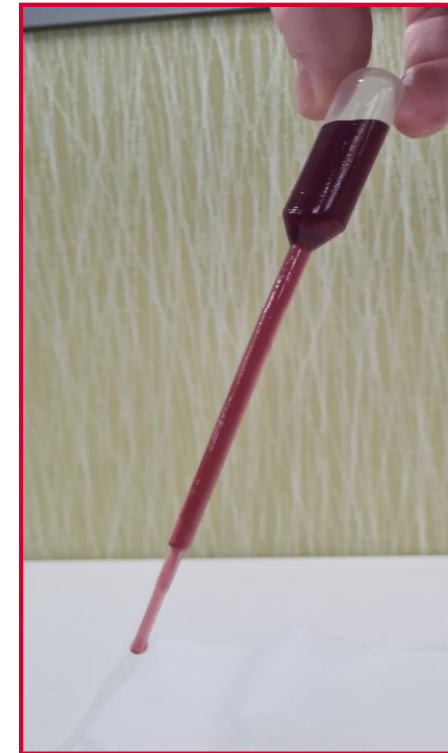
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# Free sulfur dioxide – Ensuring Accurate Results

Free sulfur dioxide is a volatile compound that is sensitive to oxygen. Due to this, the way in which samples are handled can greatly influence the final result. Internal studies performed at Universal Biosensors has indicated that a poor sampling technique can cause variation of up to 8 mg/L.

Follow the below tips to ensure a true and accurate result is obtained.

1. When aspirating your sample, ensure you fill your chosen pipette up as much as possible. Let the first few drops out before placing your sample onto the test strip
2. Avoid bubbling the sample through your pipette or techniques such as pouring from a beaker as this will oxidise the SO<sub>2</sub> in your wine
3. Conduct your testing immediately after your sample is taken – do not hold the sample in the pipette for a long time
4. Take your sample from a representative region of the tank, barrel or bottle, as different regions (particularly the top layer) may have varying levels of free sulfur dioxide



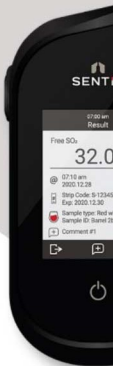
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# Free sulfur dioxide – Benchmarking against the Aspiration Oxidation Method

External validations show that when compared to the Aspiration Oxidation (or Franz Paul) method, the Sentia analyzer is extremely comparable and able to offer an immediate and accurate alternative method for the measurement of free sulfur dioxide.

When performing comparison trials, it's important to keep a few things in mind to ensure your trial provides you with the best information to make your evaluation. A basic protocol is outlined below.

1. Prepare the materials and perform the set up procedures for the Aspiration Oxidation method.
2. Obtain the samples required for free sulfur dioxide from a homogenous area of the tank/barrel/bottle. Gently dispense an aliquot of the sample in a small bottle or test tube, and cap with little to no air present.
3. Start up your Sentia analyser and remove your strips from the fridge. Keep the lid of the vial closed until it is time to test your first sample.
4. Using a 20 uL micro-pipette, aspirate 20  $\mu$ L of the wine from the middle of your test tube from step 2 and dispense (when prompted) a small drop of the sample to the free sulfur dioxide strip inserted into the Sentia analyzer. Record the result.
5. Immediately test the wine sample on the AO method from the same test tube obtained in step 2. Record the result.

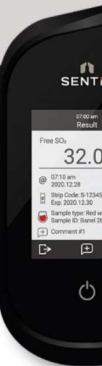
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# Free sulfur dioxide – Benchmarking against the Ripper method

External validations show that when compared to the Ripper method, the Sentia analyzer is very comparable and able to offer an immediate and accurate alternative method for the measurement of free sulfur dioxide. Sentia is not affected by reductones like the Ripper titration, so is suitable for wine samples that may have high levels of phenolics and ascorbic acid.

When performing comparison trials, it's important to keep a few things in mind to ensure your trial provides you with the best information to make your evaluation. A basic protocol is outlined below.

1. Prepare the materials and perform the set up procedures for the Ripper method.
2. Obtain the samples required for free sulfur dioxide from a homogenous area of the tank/barrel/bottle. Gently dispense an aliquot of the sample in a small bottle or test tube, and cap with little to no air present.
3. Start up your Sentia analyser and remove your strips from the fridge. Keep the lid of the vial closed until it is time to test your first sample.
4. Using a 20 uL micro-pipette, aspirate 20  $\mu$ L of the wine from the middle of your test tube from step 2 and dispense (when prompted) a small drop of the sample to the free sulfur dioxide strip inserted into the Sentia analyzer.
5. Immediately test the wine sample on the Ripper method from the same aliquot obtained in step 2. In addition, measuring the reductones and subtracting this from your Ripper titration result will provide you with the closest correlation to the Sentia analyzer. Record result.

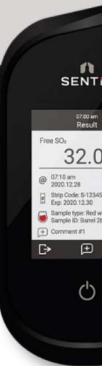
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# Free sulfur dioxide

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## Rose analysis:

- The Sentia technology platform is calibrated to red and white wine separately.
- It is not currently possible to calibrate for all styles of rosé. The testing of rosé wines has been left to the discretion of the user as it is dependent on the amount of skin contact/extraction the wine has been subject to.
- Very light “Provencal” style rosé wines tend to correlate with Sentia’s white wine calibration while those that have been pressed hard generally correlate to the red calibration. If results cause concern, we recommend testing using another method and benchmarking against the Sentia result.

## Samples with CO2:

- The Sentia platform is calibrated on still wines.
- Samples with high amounts of CO2 such as sparkling wine may skew results

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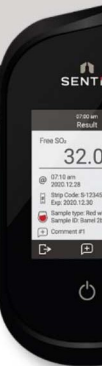
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# Free sulfur dioxide - Troubleshooting unexpected results

Your Sentia results are HIGH compared to your reference method or expectations	Your Sentia results are LOW compared to your reference method or expectations
Do not delay sample testing on your chosen reference method after testing on the Sentia analyzer, as delays may cause the Free SO <sub>2</sub> concentration to drop.	Test on your Sentia analyzer first, and then immediately test on your reference method. Do not delay testing on the Sentia analyzer as smaller volumes are more susceptible to oxidation.
Ensure that the sample aspirated for your reference method was not exposed to excessive oxygen during pipetting.	When aspirating your sample for analysis on the Sentia analyzer, ensure that excessive oxygen is not introduced to the sample. Always withdraw as much as possible into your chosen pipette (and don't aspirate just a single drop).
Check that your reference methods are performing accurately by analysing a known standard – if your reference method is under recovering, act to troubleshoot the source.	After taking your sample, do not hold it in the pipette for an extended period of time – dispense immediately.
Obtain your samples from a homogenate area of the tank, barrel or bottle. If comparing to a reference method, dispense a subsample into a smaller vessel, and use this to aspirate your aliquot from for each method.	Check that your reference methods are performing accurately by analysing a known standard – if your reference method is over recovering, act to troubleshoot the source.
Never use strips that are expired- the date listed on the analyzer overrides the date on the vial if different.	
Use the strips within ten minutes of removing from the vial, and always close the lid of the vial when not in use.	
Always select and use the correct strip index when prompted on the analyzer.	
Strips must always be stored in the fridge when not in use.	

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