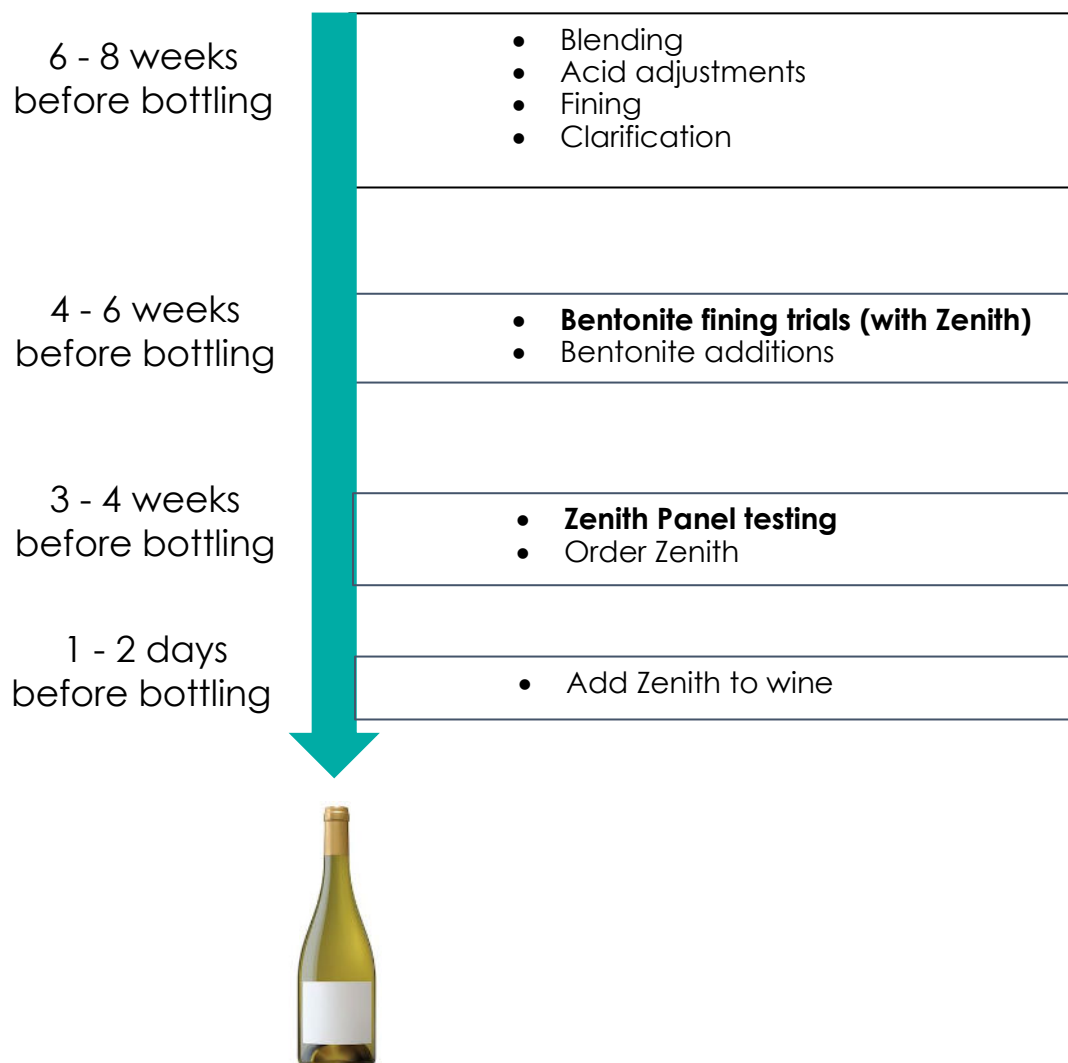


ZENITH® IN-HOUSE TESTING

A Detailed Guide to In-House Zenith Testing for White & Rose Wines

Below is a recommended timeline for important testing for Zenith. Because Zenith can interact with unstable proteins in wine, we recommend including Zenith in your **Bentonite fining trials**. This will make your Zenith Panel testing much easier. Additionally, a **Zenith Panel** is required to ensure your wine is ready for Zenith use.

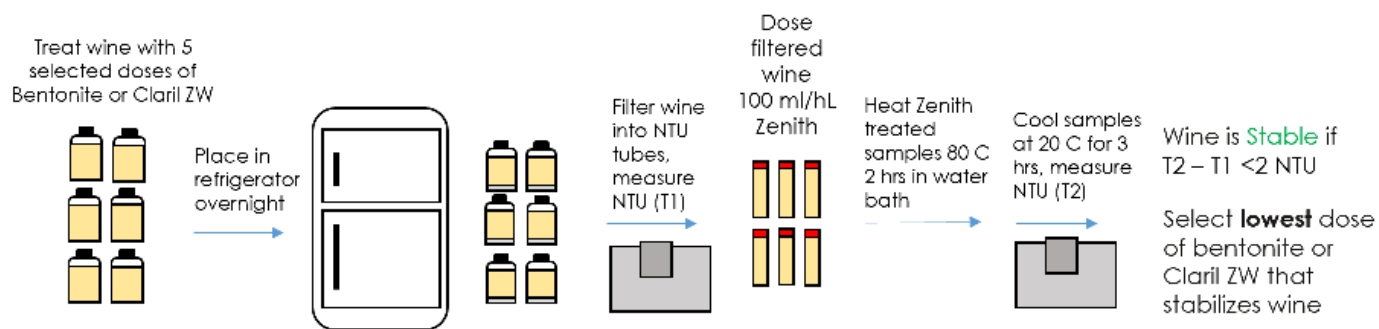


BENTONITE FINING TRIALS (WITH ZENITH)

Timing: 4 – 6 weeks before bottling

If you have not already protein stabilized your wine, and you intend to stabilize tartrates using Zenith, you can do a simple modification to your bentonite fining trials to ensure you are adding enough bentonite to stabilize your wine in preparation for Zenith use. It's important you do this testing after you have done all your major modifications to your wine including blending, other finings, acidification, concentrate trials etc. If you have already done your bentonite fining trials, you can proceed with **Zenith Panel** testing.

OVERVIEW



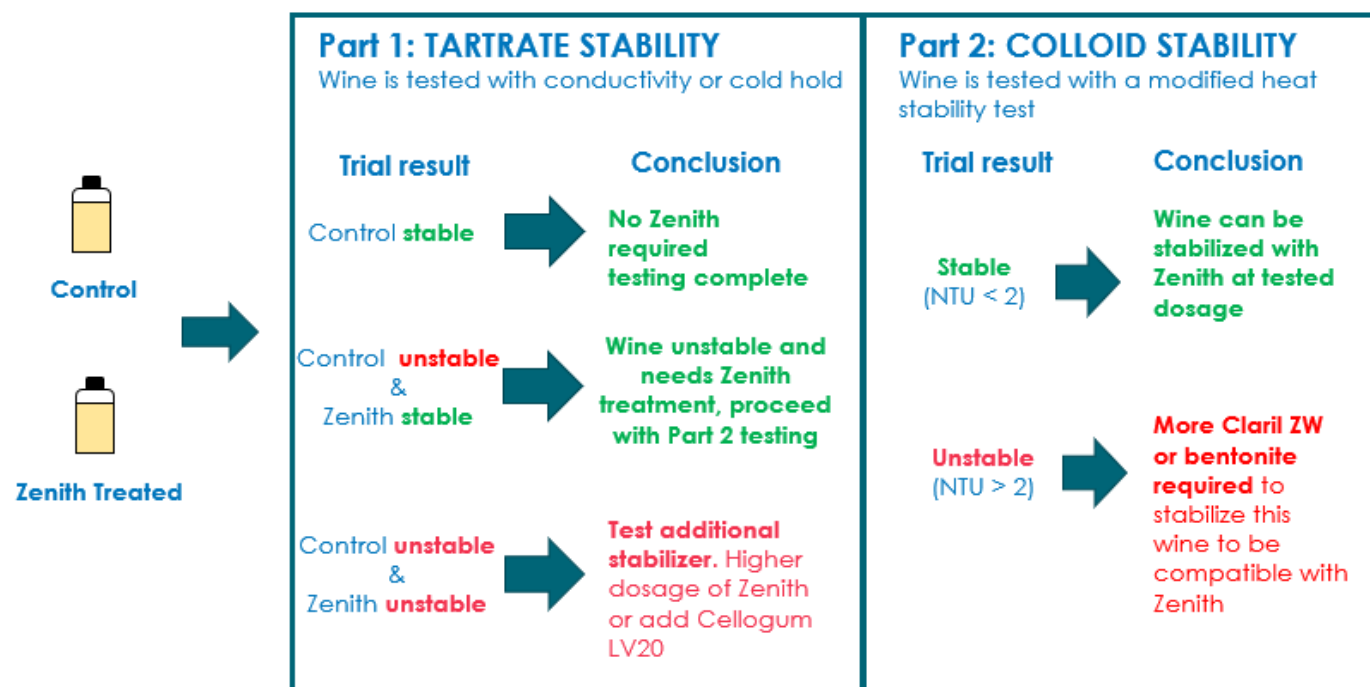
1. Select a fining agent for protein stabilization. Some winemakers use regular bentonite, we recommend [Claril ZW](#), a fining blend made specifically for preparing white and rose wines for Zenith use.
2. Obtain the wine to be stabilized and dose 5 glass bottles with 0,10 ,20 ,30 ,40 g/hL of Claril ZW (or chosen bentonite), invert samples 3 times and allow samples to settle for 24 hours in a refrigerator
3. Filter treated wine samples with 0.45 μ m filter and add 100 mL/hL of Zenith Uno to each sample. Measure initial turbidity (T1) of samples using a turbidimeter.
4. Place treated samples in a hot water bath set to 80 °C for 2 hours, then allow to cool at room temperature (~20 °C) for 3 hours
5. Measure post-heating turbidity (T2) of samples after cooling. Calculate the increase in turbidity ($T2 - T1$). If $T2 - T1 < 2$ NTU, the lowest dosage rate which meets this criterion should be the selected addition rate to be applied to the batch of wine. If none of the bottles meet this criterion, you may need to add more fining agent than 40 g/hL. In this case, repeat the testing with increasing dosage until you achieve protein stability.

ZENITH PANEL

Timing: 3 - 4 weeks prior to bottling, after wine has been treated with bentonite or [Claril ZW](#)

A Zenith Panel is a set of analysis required to ensure your wine is compatible with Zenith. This panel verifies that Zenith will not have negative interactions with wine proteins or other colloids, and that the tested dosage will be sufficient to fully stabilize potassium bitartrates in your wine. The testing consists of two parts, **tartrate stability** and **colloid stability**. An overview of the process can be found below:

OVERVIEW



ZENITH PANEL – Part 1. Tartrate Stability (Option 1 Conductivity)

This testing verifies that your wine is tartrate-unstable, and that Zenith will sufficiently stabilize your wine. We recommend **conductivity testing** for measuring tartrate stability, however wineries may also do a **cold hold** test if they don't have access to conductivity testing equipment.

Conductivity - MiniContact

Equipment/Materials needed:

- A Checkstab or Tartarcheck device
- Wine lab filtration device
- Turbidimeter
- Zenith Uno/ Zenith Perlage sample
- micropipettor

1. Filter wine to less than 1 NTU, parse into two bottles, dose one bottle with 100 mL/hL Zenith Uno, gently mix the wine. The other bottle is untreated.
2. Conduct a conductivity measurement via Mini-contact test with [CheckStab device](#) or [Tartarcheck device](#) for both wines. Specific instructions will vary depending on the instrument, please consult the manuals for details.
3. Verify stability of treatment with a [Checkstab device](#) using the calculation below:

$$\frac{(\text{initial conductivity} - \text{final conductivity})}{\text{initial conductivity}} \times 100 = \% \Delta S (\mu\text{S/cm})$$

If your change in conductivity (% ΔS ($\mu\text{S/cm}$)) is less than 3, then the sample is considered stable



Alternatively, when using a Tartarcheck device, a range of stability can be determined from the table below:

Wine	$\Delta \mu\text{S/cm}$	Stability Interpretation
White Wine	< 30	Very Stable
	30 - 50	Stable
	50 - 70	At Risk
	>70	Unstable



- If the untreated sample is stable, there is no need to do any Zenith treatment. If the untreated sample is unstable, then you will need to do Zenith treatment. If the Zenith treated wine is still stable, then it passes the tartrate stability test. You may proceed with colloid testing. If the Zenith treated is unstable treat with 50 mL/hL Cellogum LV20 and 100 mL/hL Zenith Uno and repeat tartrate stabilization check. You will want to conduct your colloid testing with the stabilizer dosage you use for this testing.

ZENITH PANEL – Part 1. Tartrate Stability (Option 2 Cold Hold)

Wineries may also do a cold hold test with relatively inexpensive equipment. The testing takes more time to get results, but will still be accurate. We **do not** recommend the freeze test for tartrate stability testing.

Equipment needed:

- At least two [conical tartrate stability flasks](#)
- Wine lab filtration device
- refrigerator (or freezer) that can be set to - 4 C
- parafilm
- flask holder (test tube tray works)
- micropipettor or small glass pipette

- Filter wine to less than 2 NTU, parse 100 mL of wine into two labeled conical stability flasks (Control, Zenith)
- Dose Zenith labeled flask with desired dosage of Zenith UNO. Cover both flask tops with parafilm
- Place the flasks in refrigerator/freezer set to - 4 C for 6 days.
- After 6 days, observe for crystals in flask, presence of crystals indicates wine is unstable.





Inspiring innovation.

ZENITH PANEL- Part 2. Colloid Stability

Verify that the wine is protein and colloid stable to use Zenith.
This is essentially a modified heat stability test.

Equipment/materials needed:

- Water bath or oven set to 80 ° C
- Wine lab filtration device
- Turbidimeter
- Turbidimeter glass tubes with lids
- [Claril ZW](#) or bentonite
- Micropipette

1. Filter wine to below 1 NTU and parse into a turbidimeter tube with labels.
2. Add 100 mL/hL of Zenith Uno to sample.
3. Measure initial turbidity (T1) of sample using a turbidimeter.
4. Heat treated sample to 80 °C for 2 hours, then allow to cool at room temperature (~20 °C) for 3 hours
5. Measure post-heating turbidity (T2) of sample after cooling, if $T2 - T1 < 2$ NTU, the sample is considered stable.
6. If the Zenith treated sample is > 2 NTU, the sample is considered "colloid unstable". This means the wine requires more bentonite to be able to be used with Zenith.



Have More Questions? We're Here to Help!

Contact the Enartis USA technical line (707) 838-6312 or checkout our video on Zenith testing and application:

[How to Stabilize Tartrates with Zenith Uno](#)

The indications supplied are based on our current knowledge and experience, but do not relieve the user from adopting the necessary safety precautions or from the responsibility of using the product(s) properly.

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