

1- Method

- Measure the turbidity of the wine: T1.
- If $T1 \geq 2$ NTU, filter the wine (0.65 μm , cellulose ester membrane).
- Heat the filtered wine for 30 minutes at 80°C in a water bath.
- Allow it to cool down for 45 minutes at ambient temperature.
- Measure again the turbidity after cooling down: T2.

NOTE: Do not try to speed up the cooling time (with water from the tap, etc.) to less than 45 min as this lead to an under-estimation of the dosage due to a reduced turbidity. If the cooling time is greater than 45 min there is a risk of over-estimation due to the possible precipitation of protein fractions that are normally thermally stable.

If $T2 - T1 < 2$ ► **The wine is stable**
If $T2 - T1 > 2$ ► **Presence of unstable proteins**

2- Dosage determination

$$\Delta = T2 - T1$$

- Prepare 2 or 3 samples of the wine, and treat them with doses of bentonite within the values in g of 2 to 3 times Δ .
- Example: if $\Delta = 10$ NTU, treat the samples with the equivalent of 20 – 25 and 30 g/hL.
- Wait 30 min after addition of bentonite and repeat the test on each sample, according to the operating mode. The correct dose will correspond to the lowest one giving $\Delta < 2$, increased by 10g
- Example: if the test gives 25g/hL where $\Delta < 2$ NTU, the final treatment in the tank will be done with 35g/hL

3- Preparing the bentonite solution for test:

- Weigh 5 g of bentonite
- Place 100 mL of water in a 250 mL beaker
- Stir the water in the beaker using a magnetic stirrer, and slowly pour the bentonite into the vortex.
- Wait one hour to allow the bentonite to swell
- Add the necessary volume of solution to each sample

IMPORTANT POINTS:

- Some filtration membranes adsorb proteins, hence cellulose ester is required.
- Sodium bentonites take longer to hydrate than calcium bentonites.
- The bentonite used for the test must be the same as the one used for the treatment.
- High pH can influence the results as bentonite is less reactive at high pH.
- It is advisable to re-check the stability of the wine in the tank once the treatment is achieved.