



TRIAL FINING SERIES

EQUIPMENT

4 ounce flint bottles with caps
Refrigerator for settling
Oven for incubation
Lab filtration system: Millipore Sterifil system
Vacuum source: Vacuum pump or water aspirator
Serological pipets: 1 ml, 5 ml, 10 ml or Eppendorf pipettors
Membrane filters: 0.45u
Glass prefilters: AP25
Screwcap test tubes 20 x 150 mm
Test tube racks
Ratio Turbidity meter with 20 x 150 mm test tube adapter
Filtering flask
Test tubes 25 x 200 mm

FINING MATERIALS

PVPP(Polyclar AT), 3% solution
Polycase, 1.5% solution
Bentonite, 3% solution
Egg white, 3% solution
Gelatin, 1.5% solution
Casein (Kolorfine), 1.5% solution
Isinglass, 0.5% solution
Carbon
Sparkolloid, 1.5% solution

Note that the type of fining material must be specified, for example with Bentonite, indicate type of product, such as Miracol, agglomerated, KWK, agglomerated KWK, Vitiben....

REAGENTS

Turbidity standards for calibration

PROCEDURE FOR MATERIAL ADDITION

Prior to start, select materials to be used. Check the soundness and concentration, and allow the solution temperature to equilibrate to room temperature.

1. Decant samples to 4 ounce (120 ml) bottles, leaving space for fining material to be added. Label each with winery name, variety and material addition level. It is best to make additions as soon as possible after decanting so that the sample doesn't remain in partial bottles long. Keep one bottle as a Control.
2. Use chart for volume of material to add. A 1 ml disposable serological pipet works best for most additions. For bentonite, a glass 5 ml serological pipet works well.
3. **IMPORTANT:** Mix fining material well, add to sample bottle and mix immediately. Follow guidelines below for correct order of addition for samples requiring more than one material.
4. Top off each bottle with wine, mix again. Make sure Control bottle is topped off. Check caps and labels.
5. Store in refrigerator for settling, usually 1-2 days, until samples are ready to be evaluated. Remove and let come to room temperature before evaluating.

ORDER OF ADDITION

SUGGESTED LEVELS (#/1000 GAL)

PVPP *wait 15 minutes before adding other materials	1/4, 1/2, 1, 2, 3
Bentonite	Varies based on prior treatment
Egg White	1/8, 1/4, 1/2, 1, 2, 3
Gelatin	1/8, 1/4, 1/2, 1, 2
Casein, Polycase	1/8, 1/4, 1/2, 1, 2
Isinglass	1/16, 1/8, 1/4, 1/2
Carbon	
Sparkolloid	1, 2, 3

Note: Addition levels are often requested by client or are determined as part of consulting. Levels will be indicated on lab sheet, or ask for clarification.

To calculate the quantity of fining material to add for specific levels:

- 1 lb/1000 = 2.88 mls 0.5% solution/120 ml sample
- 1 lb/1000 = 0.96 mls 1.5% solution/120 ml sample
- 1 lb/1000 = 0.48 mls 3% solution/120 ml sample
- 1 lb/1000 = 0.24 mls 6% solution/120 ml sample

PROCEDURE FOR EVALUATION OF HEAT STABILITY

1. Select clean, dry tubes for filtration and sample containers.
2. Vacuum filter samples, starting with highest amount of bentonite, with 0.45u membrane--prefilter with AP25 if necessary for clarity(≤ 1.0 NTU). Please note on lab sheet if samples are difficult to filter.
3. Fill 2 screwcap tubes(20 x 150), apply cap and label each tube with appropriate level and HEAT or CONTROL.
4. Incubate HEAT tubes at 60°C for 24 hours.
5. Remove from heat and observe under high intensity light for precipitate or obvious haze.
6. Place in refrigerator for an hour or longer.
7. Observe at room temperature after chilling:
 - a. Visually for haze or precipitate as compared to CONTROL
 - b. Record NTU of CONTROL and HEAT
8. Interpretation of results: UNSTABLE is defined as samples with fluffy, flocculent, precipitate or NTU differences ≥ 2.0 .

Note: When using turbidimeter, make sure that the test tube adapter is aligned properly. For heat stability results, standardizing the meter is not required.

DISPOSAL

Fining samples - rinse with water down sink