

Brehm Vineyards®

Chardonnay Grape Log v1.1

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The *Chardonnay Log v1.1* is your personal diary documenting your winemaking process. You should record any and all manipulations and additions to the grapes and wine in this *Chardonnay Log*. You should also write down any observations you have about the tastes, smell, feel, and appearance of the juice and wine. This *Chardonnay Log*, in conjunction with the *Chardonnay Guide* will prove invaluable to you in future winemaking endeavors as you refer back to them.

Please read and understand this *Chardonnay Log* and the comprehensive *Chardonnay Guide* before receiving your grapes. It is important that you have also purchased, received, and familiarized yourself with all the *Essential Equipment* necessary for making your *Chardonnay wine*. A good winemaker is a prepared winemaker.

Essential Equipment

Following is a list of equipment and supplies that Brehm Vineyards® feels is the *Essential Equipment* necessary for making your *Chardonnay Grape Wine Beginnings*. Most of the equipment and supplies can be purchased directly from home winemaking retailers. Some of the items may need to be purchased from other sources such as your local hardware store. An incomplete list of home winemaking retailers, some who ship via U.P.S., is provided at the end of the **Log**.

Before requesting shipment of your grapes and other included ingredients for your *Chardonnay*, purchase and receive all your *Essential Equipment*. Be sure to read and understand all the instructions that come with your equipment and supplies.

Also, read the John Iverson's *Home Winemaking, Step by Step*, or other recommended book. We may do a few things differently from the methods described in the book. Do not worry. The book will help to give an overview of the process and an idea of how to use the equipment. There are other books that also provide a good basis for winemaking, which are listed on BV's web site. Beer makers will probably have the know how to proceed directly to the grape.

Essential Equipment Checklist

Attach all receipts for your purchases and indicate the date of purchase, the supplier, and prices on the *Essential Equipment Checklist* below. Under quantities the first figure is for 1 x 5 gallon batch, the second is for 2 of five gallons.

Date of Purchase _____ Supplier _____

| <u>Quantity</u> | <u>Date Received</u> | <u>Price</u> | <u>Item</u> |
|-----------------|----------------------|--------------|---|
| 1 | _____ | _____ | <u>Home Winemaking, Step by Step 3rd Edition</u> by J.Iverson |

| | | | |
|----------------------------------|---------------------------|----------------|--|
| 8 oz. | _____ | _____ | Star San, acid sanitizer for surface sanitation |
| 4 oz | _____ | _____ | Potassium Metabisulfite |
| 4 oz | _____ | _____ | Tartaric Acid |
| 4 oz | _____ | _____ | Citric Acid β |
| 100 grams | _____ | _____ | Fermaid Powder yeast nutrient |
| <i>For Chablis style only</i> | | | |
| 10 grams | _____ | _____ | <i>Lysozyme</i> |
| <i>For Burgundy style only</i> | | | |
| 2.5 grams | _____ | _____ | <i>Dry Malolactic Bacteria - Viniflora (2.5 g)</i> |
| 2 to 3 ounces | _____ | _____ | <i>French oak cubes</i> |
| 1 | _____ | _____ | Pyrex Erlenmeyer Flask, 500 ml |
| 1 | _____ | _____ | 20 ml/cc graduated plastic syringe, no needle, for for measuring |
| 2 or 3 | _____ | _____ | 5 gallon glass carboy |
| 2 or 4 | _____ | _____ | 3 liter jug, with screw cap |
| 2 or 3 | _____ | _____ | Rubber stopper (bored) # 6-1/2 for 5 gal. carboys |
| 2 or 4 | _____ | _____ | Rubber stopper (bored) # 6 for 3 liter jugs |
| 3 or 6 | _____ | _____ | Plastic, fermentation lock |
| 10 feet <i>optional</i> | _____ | _____ | 1/2" I.D., 3/32" wall Nalgene 380 PVC Food/Bev. grade tubing or equivalent |
| <i>for the serious winemaker</i> | | | |
| 10 feet | _____ | _____ | 3/8" I.D., 1/16" wall Nalgene 380 PVC Food/Bev. grade tubing or equivalent |
| 1 | _____ | _____ | Hydrometer in 0-30° brix or balling |
| 1 | _____ | _____ | Bottle filler, to fit 3/8" hose, on/off probe on bottom |
| 1 | _____ | _____ | 38 mm x 350 mm Hydrometer jar, plastic |
| 1 | _____ | _____ | Floating thermometer (30° to 100° F range) |
| 1 | _____ | _____ | Ames Dextro Check, Residual Sugar testing kit |
| 1 | _____ | _____ | Funnel to fit into carboys (food grade) |
| 1 | _____ | _____ | Plastic or Glass Wine Thief |
| 1 | _____ | _____ | 24" racking tube for 3/8" or 1/2" hose that also acts as a stirring rod. |
| 48-60 | <u>start saving &</u> | <u>washing</u> | Bottles, various sizes, for crown caps. |
| 100 | _____ | _____ | Crown caps for bottling |
| 1 | _____ | _____ | Bench Model Capper |
| or | | | |
| 26 or 52 | _____ | _____ | 1 st quality, twin disk amalgamated corks - rent an irise style floor corker |

Optional Equipment

Following is a list of items that we feel are supplemental to the *Essential Equipment*. These items can make winemaking an easier process. Some of the items, such as liquid pumps, can be quite costly. If you wish to purchase these items please, contact one of the suppliers listed at the end of this log for information and prices.

Attach all receipts for your purchases and indicate the date of purchase, the supplier, and prices on the *Essential Equipment Checklist* below.

Date of Purchase _____ Supplier _____

| <u>Quantity</u> | <u>Date Received</u> | <u>Price</u> | <u>Item</u> |
|-----------------|----------------------|--------------|---|
| 1 | _____ | _____ | <u>The Way to Make Wine</u> , by Sheridan Warrick |
| 1 | _____ | _____ | <u>Home Winemaking for Dummies</u> , by Tim |

| | | | |
|-------|-------|-------|---|
| 1 | _____ | _____ | <u>Grapes into Wine</u> , by Philip Wagner |
| 1 | _____ | _____ | <u>Modern Winemaking</u> , by Philip Jackish |
| 1 | _____ | _____ | <u>Knowing and Making Wine</u> , by E. Peynaud |
| 2 | _____ | _____ | 6-1/2 or 7 gallon glass carboy |
| 1 | _____ | _____ | Pyrex Erlenmeyer Flask, 250 ml |
| 1 | _____ | _____ | Pyrex Beaker, 1 liter |
| 2 | _____ | _____ | Pyrex Beaker, 500 ml |
| 2 | _____ | _____ | Pyrex Beaker, 250 ml |
| 2 | _____ | _____ | Rubber stopper (bored) # 6-1/2 for carboys |
| 2 | _____ | _____ | Plastic, 2 bubble fermentation lock |
| 1 | _____ | _____ | 27" carboy brush |
| 1 | _____ | _____ | Free SO2 Kit - CHEMetrics, Inc. |
| 1 | _____ | _____ | Titrettor for SO2 Kit |
| 1 | _____ | _____ | Jet Bottle Washer |
| 4 | _____ | _____ | 7.25 oz. INAO tasting glasses |
| 1 | _____ | _____ | Shurflo Model 2088-594-154 electric pump, 3.0 gpm. |
| 1 | _____ | _____ | Irised floor model bottle corker |
| 48-60 | _____ | _____ | Corks, Extra First quality (or better) #9, light wax |

Note: These lists are subject to alteration and availability of the supplies, and the intent of the winemaker. New products are becoming available every day. It is advisable to communicate with a competent supplier before embarking on your winemaking adventure.

Request Shipment/Pick Up of Your Juice

Once you: (check as you go)

- _____ Have received all *Essential Equipment*
- _____ Read all the instructions provided with the equipment and supplies
- _____ Read the comprehensive *Chardonnay Guide v1.1*
- _____ Read Home Winemaking, Step by Step by John Iverson
- _____ Are mentally prepared to undertake the winemaking process
- _____ Will be close to home for 15 days during the primary fermentation

Please contact your grape supplier or Brehm Vineyards at least two weeks prior to having your juice shipped or picked up.

Date juice requested for pickup or shipment: _____

Contact Name: _____

Contact Phone Number: _____

Expected Delivery/Pick Up date: _____

Receiving the Juice

The winemaking process starts the day you receive your juice. Remember, copious note taking and accurate measurements are essential in recording your winemaking experience.

Date juice received: _____

Method juice were shipped to you: (Circle)

Picked Up from Freezer Truck Shipment Air Cargo Shipment
If via Air Cargo: Date Shipped: _____

Airline: _____ Air Waybill #: _____

If via Truck: Date Shipped: _____

Truck Carrier: _____ Bill of Lading #: _____

Notes on Condition of Pails from Shipment

Make sure to mark any negative comments / observations about the juice pails on your *Air Waybill* or *Truck Bill of Lading* in the presence of the cargo / truck agent. Make sure the agent signs the waybill / bill of lading verifying your comments / observations. It is not unusual for the pails to be slightly imploded. Make sure that there is no leakage of juice.

Defrosting Pails

Please review your *Chardonnay Guide* for hints on thawing your pails.

Average Air Temperature where pails are defrosting: _____

Date when lids are removed from the pails: _____

Notes on Condition of Juice: The brown juice is oxidized. It will fall yellow-green at the end of fermentation ~ no worries. The addition of SO₂ while the juice is brown may cause it to remain brown. Wait until the juice/wine falls bright before any SO₂ addition (which will be after the primary fermentation is complete.)

Specifications and Acid additions of Chardonnay Juice :

2009 White Salmon Vineyard, Columbia Gorge AVA, Freezer # 935

23.5° brix 0.52 Total Acidity (0.52 g/100mL) 3.56 pH

Tartaric acid addition:

Chablis style = 36 grams, 1 ¼ oz.

Burgundy style = 46 grams, 1 2/3 oz.

2009 White Salmon Vineyard, Columbia Gorge AVA, Freezer # 914

21.5° brix 0.51 Total Acidity (0.51 g/100mL) 3.57 pH

Tartaric acid addition:

Chablis style = 36 grams, 1 ¼ oz.

Burgundy style = 46 grams, 1 2/3 oz.

2006 White Salmon Vineyard, Columbia Gorge AVA, Freezer #335

22.8° brix 0.58 Total Acidity (0.58 g/100mL) 3.59 pH

Tartaric acid addition:

Chablis style = 24 grams, 0.85 oz.

Burgundy style = 34 grams, 1.2 oz.

*** Once the grapes are frozen, there is no deterioration in quality, we guarantee it!
2006 is as fresh as 2011.**

Chardonnay: Chablis and Burgundy styles

Prepare Juice for Fermentation

Stir the thawed juice extremely well. If you are making both styles of Chardonnay, mark one carboy and one 3-liter jug *Burgundy* and mark another carboy and jug *Chablis*. Now siphon or pour into your 5-gallon carboy(s). Make sure all residual cream of tartar is also equally transferred.

Chablis and/or Burgundy: Take Initial Measurements

Now you will take the Initial Measurements of the grape juice – even though you have them. When making wine, it is very important to know as much about the grapes as possible before fermentation. However, it can be difficult to get an accurate brix, pH and total acid readings at this time due to the sugar and acid separation caused by freezing. While Brehm Vineyards® stats are accurate, this is the time to measure the temperature and degrees brix/balling of the grape juice.

Date of initial measurements: _____

Use your hydrometer to measure the initial degrees brix/balling of the grape juice.

Initial Degrees Brix/Balling: _____

Use your thermometer to record the temperature of the juice.

Temperature of Juice: _____

CHABLIS & BURGUNDY FERMENTATION

Chablis: Add lysozyme & tartaric acid

The initial level of acid often sought in grape juice is 0.7 g/100ml. The recommended amount of acid for the particular Chardonnay you have, should be added at this time. See previous:

Specifications and Acid additions of Chardonnay Juice

The lysozyme is added to prevent malolactic fermentation. 0.32 oz / 10 grams per 5 US gallons / 19 liters of juice will add 500 parts per million to the *Chablis* carboy. Dissolve the lysozyme in about 1 cup of the juice before adding to the *Chablis* carboy. Mix well.

Date Lysozyme & Tartaric acid added to *Chablis* carboy = _____

Burgundy: Add Oak Cubes and Tartaric acid

Add the 2 to 3 oz. of the French oak cubes to the *Burgundy* carboy.

Date Oak Cubes added to *Burgundy* carboy = _____

Add the specified amount of tartaric acid to the *Burgundy* carboy. Dissolve the tartaric acid in about a cup of juice before adding to the *Burgundy* carboy.

Date Tartaric Acid added to *Burgundy* carboy = _____

Chablis & Burgundy: Make a Yeast Starter

The selected winemaking yeast recommended for your *Chardonnay* is Lalvin's CY3079. This yeast is a strain selected from fermentations in the Burgundy region of France where it compliments the typical white Burgundy styles of winemaking. This yeast is said to release peptides at the end of fermentation that enhances the wine with aromas such as fresh butter, honey, white flowers and pineapple. The yeast is in freeze-dried form. Refer to your *Chardonnay Guide* for information on hydrating the yeast and making a yeast starter.

An alternate yeast, among many, is DV-10.

Date you hydrate yeast & make yeast starter: _____

Add The Yeast Starter

The primary sugar fermentation begins when you add the Yeast Starter to your grape juice. Remember, your grape juice should be at a temperature of at least 45°F / 7.2°C before adding the yeast starter. It is desirable that the differential between starter and juice be no more than 10° F. This speaks to adding the cooler juice gradually to the starter.

Date(s) you add Yeast Starter to carboy: _____ (Mix well)

Temperature of juice at yeast addition: _____

Degrees brix of juice at yeast addition: _____

After you add the Yeast Starter into the carboy, to prevent loss of juice from foaming during fermentation, siphon a portion of the juice back into your 3 liter jug. Fill the jug to its shoulder. Seal both the carboy and jug with airlocks. You will ferment this portion of the juice in the jug

until the foaming from fermentation in the carboy subsides. You will then add the juice from the 3 liter jug back into the carboy. If your carboy is not filled to the neck with wine, top it up with some distilled water.

Date you add juice from jug into carboy: _____

Temperature of juice at jug transfer: _____

Degrees brix of juice at jug transfer: _____

Add Yeast Nutrient

Once the fermentation has commenced, you are ready to add the yeast nutrient. The Fermaid Powder yeast nutrient (or equivalent) you purchased as part of your *Essential Equipment* is a multi ingredient product that aids yeast growth, minimizes off odors and stuck fermentations. It is recommended that you add ½ the prescribed amount at the beginning of fermentation and ½ at 15° brix, no later than 12° brix. Please read and follow the directions provided with your yeast nutrient. Record the amounts of nutrient added below.

Dates you add Yeast Nutrient to *Chablis* carboy: _____

Amount added _____

Dates you add Yeast Nutrient to *Burgundy* carboy: _____

Amount added _____

Charting your Winemaking Progress

Within 48 hours of adding your yeast starter, you will begin to see the signs of active fermentation. To follow the progress of the wine, conduct each of the following tests and record the results on the following **Fermentation Progress Chart** located on the next page. Use the juice from your carboy for these tests.

- 1) **Record Temperature** - Take the temperature of the fermenting juice.
- 2) **Degrees Brix/Balling** - Using a hydrometer, measure the degrees brix/balling of the fermenting grape must.
- 3) **Sensory Notes** - Record any notes you have about the fermenting grape must. Observations about smell, taste and appearance of the wine are very important in achieving a fuller appreciation of the wine and the process. If you are not tasting, smelling, feeling, and writing down your experiences, you are missing the most important part of this exercise!

Note – Be sure to sterilize all items entering your fermenter, and between fermenters.

test the pH of your wine. If you or acquaintance does have a pH meter, make sure it is accurate! Since you added lysozyme to the *Chablis* juice before fermentation, we can assume that the Total Acidity (TA) has not changed much and malolactic fermentation has been inhibited. We can also estimate the Alcohol content based on the starting sugar level. Therefore, only the pH of the *Chablis* style wine is necessary to determine.

Chablis: First SO₂ addition

When you receive the testing results back from the laboratory, use the pH results to determine the proper amount of SO₂ to add to the Chablis style carboy. Please see the section **Chablis and Burgundy: SO₂ Additions** to determine the amount of SO₂ to add based on pH and how to make a 10% SO₂ solution. Add the SO₂ to the carboy.

Date of Sample: _____ pH of wine: _____

Testing Laboratory: _____ Laboratory Phone #: _____

Date of SO₂ addition to Chablis carboy: _____ Amount of SO₂ addition: _____

Chablis: Begin Batonnage

Please see **Chablis and Burgundy: Batonnage**.

BURGUNDY FERMENTATION

Burgundy: Completion of Sugar Fermentation, Residual Sugar Test

Make sure to keep your fermentation air locks clean, filled and tightly fitted within the mouths of your *Burgundy* carboy and jug. When all bubbles stop appearing and the wine does not taste sweet, sugar fermentation may be complete. Hydrometer readings should be negative / in minus numbers. The Dextro-Check Kit for sugar analysis is similar to checking sugar in urine. Wine is stable (not in danger of having another sugar fermentation) when the residual sugar is 0.2% or less. A color chart is matched to the wine / tablet test jar to give a very accurate reading. Keep watching all the time! Higher readings occur by the color reactions repeating themselves - in which case the wine / juice needs to be diluted. If higher than 0.2% residual sugar is seen, make sure wine is at least 70° F / 21°C and wait for sugar fermentation to complete. Do another test in a week or two. If the wine is stuck, give Brehm Vineyards or your local wine shop a call. Repeat residual sugar test until 0.2% is achieved. If your residual sugar test measures 0.3%, go ahead and induce a malolactic fermentation.

Date of residual *Burgundy* sugar testing: _____ Results of sugar test: _____

Date of residual *Burgundy* sugar testing: _____ Results of sugar test: _____

Burgundy: Induce Malolactic Fermentation

Once you have determined that the Burgundy style wine has a residual sugar of 0.3% or less, it is time to induce a malolactic fermentation. You want to warm the wine to a temperature of about 70°F / 21°C. It is also important to maintain this temperature during the malolactic fermentation.

The malolactic culture are usually sufficient for 60-gallons of wine. Add approximately 1/8 of the powder to your 5-gallons of Burgundy style wine. Add the freeze-dried malolactic culture to the wine directly, and stir the wine gently to mix. Beware the wine may foam over the top of the carboy from the dissolved CO₂. You may also remove about 100 ml of wine from the carboy and dissolve the malolactic bacteria in this before adding it to the full carboy of wine. The remaining bacteria may be saved, well sealed, in the freezer for a future batch of wine. However, the bacteria's activity will deteriorate over time.

Date of Malolactic Culture addition to *Burgundy* carboy: _____

Temperature of *Burgundy* wine upon malolactic addition: _____

Average Air Temperature where *Burgundy* wine is stored: _____

Burgundy: Begin Batonnage

Now that the Burgundy wine has complete its primary sugar fermentation, you will begin *Batonnage* on the wine. Please see **Chablis and Burgundy: Batonnage**.

Burgundy: Send Wine Sample for Testing

During the *batonnage* of your *Burgundy* carboy, you may notice that the malolactic fermentation bubbles have stopped forming. This means that the MLF **may** be complete. In any case, wait at least 6 weeks from the time of addition of the malolactic culture before you send a sample to a wine-testing laboratory. Malolactic Fermentation takes weeks to months to complete at 70°F / 21°C. Contact a laboratory for instructions on how to send them a sample.

Have them test for **Malolactic Fermentation Completion, using the enzymatic method**. If they confirm that the MLF is complete, also have them test the **pH** of the wine. When you receive the results, record them here.

Date of Sample: _____ Volume of Sample: _____

Testing Laboratory: _____ Laboratory Phone #: _____

Malolactic fermentation complete? _____ pH of wine: _____

Burgundy: First SO₂ addition

When you receive confirmation of malolactic fermentation completion, based on the pH of you wine, add the proper amount of SO₂ to protect your wine from oxidation. Continue on with the *batonnage* until you have stirred the lees once a week for at least 2 months. Please see the section **Chablis and Burgundy: SO₂ Additions** to determine the amount of SO₂ to add based on pH and how to make a 10% SO₂ solution. Add the SO₂ to the carboy.

Date of SO₂ addition to Burgundy carboy: _____

Amount of SO₂ addition: _____

The following sections of the *Chardonnay Grape Wine Beginnings Log* pertains to both your *Chablis* and *Burgundy* wines.

Chablis and Burgundy: Batonnage

Batonnage refers to aging the wine on the lees. *Batonnage* involves stirring the lees each week back into solution. Stir the lees once a week for 8 weeks. The aging and stirring of the lees adds complication to the wine. Please review the *batonnage* section in your *Chardonnay Grape Wine Beginnings Guide*.

Use the racking rod, a long plastic tube or stainless steel stirring rod and mix the lees at the bottom of the carboy. Be careful not to spill any wine while you are mixing. Stirring the lees will cause foaming in the wine due to dissolved CO₂. You may find it necessary to use your wine thief to take out 50-100 ml of wine so that you can effectively mix the lees without it foaming over. This foaming should diminish after the first stir. Make sure to keep the level up the wine to the neck of the carboy after the first stirring. It is also very important that you minimize the wines exposure to air during stirring.

Batonnage

| | |
|-----------------------------|---------------------|
| Date of lees stirring _____ | Sensory Notes _____ |
| Date of lees stirring _____ | Sensory Notes _____ |
| Date of lees stirring _____ | Sensory Notes _____ |
| Date of lees stirring _____ | Sensory Notes _____ |
| Date of lees stirring _____ | Sensory Notes _____ |
| Date of lees stirring _____ | Sensory Notes _____ |
| Date of lees stirring _____ | Sensory Notes _____ |
| Date of lees stirring _____ | Sensory Notes _____ |
| Date of lees stirring _____ | Sensory Notes _____ |
| Date of lees stirring _____ | Sensory Notes _____ |
| Date of lees stirring _____ | Sensory Notes _____ |
| Date of lees stirring _____ | Sensory Notes _____ |

Chablis and Burgundy: Post Batonnage Fining

For both your *Chablis* and *Burgundy* wines, after 8 weeks of weekly lees stirring, it is time to fine the wines. Bentonite, a clay, is used to remove any floating particles in your wine, thereby clarifying it. You purchased bentonite as part of your *Essential Equipment*. Follow the directions on the package for preparation. You will use 7 grams bentonite per 5-gallons of wine. This usually requires preparation of the bentonite the day before use. Add the proper amount of the bentonite slurry to each of your 5-gallon carboys of wine. Stir the bentonite in to the wine thoroughly. The bentonite also strips away the lysozyme enzyme leaving the *Chablis* wine vulnerable to malolactic fermentation. All hoses, carboys fermentation locks must be sterilized before being used with the *Chablis* wine.

Date of Bentonite addition to *Chablis*: _____

Date of Bentonite addition to *Burgundy*: _____

You will now Cold Stabilize the wine. Please see **Chablis and Burgundy: Cold Stabilization and Gross Lees Racking** below.

Chablis and Burgundy: Cold Stabilization and Gross Lees Racking

After bentonite addition, you will need to let your wine settle for at least 3 weeks in a cool location, 35-40°F / 1.7-4.5° This will cold stabilize the wine.

After 3 weeks of cold settling, rack the clarified wine off of the sediment. This is called the Gross Lees Racking. Please see your *Chardonnay Guide* for more information on Gross Lees Racking.

Be careful not to transfer any of the sediment at the bottom of the carboy. Use the 1/2” hose for racking. Minimize exposure of the wine to the air. Some winemakers with access to argon, nitrogen or carbon dioxide to sparge the carboy to be filled before racking the wine. Both the argon or carbon dioxide (CO₂) is heavier than air and when pumped into an empty carboy effectively pushes out the air. Then you can rack your wine into the carboy with little to no air contact at all. Make sure that you keep the wine in the carboys topped up to the neck.

Date of Gross Lees Racking of *Chablis*: _____

Date of Gross Lees Racking of *Burgundy*: _____

Chablis and Burgundy: SO₂ Additions

When your wine is not actively fermenting (either sugar or malolactic fermentation) it is important that you keep a good SO₂ addition regiment with your wine. SO₂ addition is necessary after the Gross Lees Racking for both the *Chablis* and *Burgundy* wine. For the *Chablis* wine, the pH to refer to came from the laboratory testing you had performed after the end of sugar fermentation. For the *Burgundy* wine, the pH you will refer to is from the laboratory testing you had performed after the completion of malolactic fermentation. The pH of your wine will be assumed to remain constant after these fermentations are complete. You will use this pH to determine how much SO₂ to add to the wine each time you rack the wine.

To make an accurate addition of potassium metabisulfite to your wine, you must have an accurate pH measurement. Based on the pH of your wine, read the tenths and hundredths position of your pH reading and this will tell you the amount of Potassium Metabisulfite, in parts per million, to add to your wine.

If your pH reading for the *Chardonnay Grape Wine Beginnings* is 3.45 then you would want to add 45 parts per million (ppm) of SO₂. Because white wine is more easily oxidized, some winemakers add an additional 10 ppm SO₂ to the amount dictated by their pH reading. In this case, a pH of 3.45 would mean the addition of 55 ppm SO₂

Use the chart on the following page to determine the necessary volume of a 10% Potassium Metabisulfite solution to add to your wines based on the pH of the wines.

Amount of SO₂ added to *Chablis* wine after Gross Lees Racking: _____

Date of SO₂ addition to your *Chablis* wine after Gross Lees Racking: _____

Amount of SO₂ added to *Burgundy* wine after Gross Lees Racking: _____

Date of SO₂ addition to your *Burgundy* wine after Gross Lees Racking: _____

To make a 10% solution of Potassium Metabisulfite, add 20 grams - equivalent to one level tablespoon, to 200 milliliters of distilled water. Thoroughly mix the powder until completely dissolved to form the solution. Make sure to label the container you are using for the potassium metabisulfite solution indicating the date prepared. Any container with SO₂ (Potassium Metabisulfite) solutions should be marked with Skull and Crossbones and kept away from children. If you are making extra, please note that SO₂ solution will degrade in a few days. Excess SO₂ solution may be used in lieu of water in fermentation locks. Solution should be measured with the plastic syringe. Be careful. Do not drink or inhale fumes of the SO₂ solution.

Caution: SO₂ can induce allergic reactions. Please read and understand the Safety Material Data Sheet that should be provided with the Potassium Metabisulfite you purchase.

Potassium Metabisulfite Addition Chart

| | | | | | |
|--|--|------|------|------|------|
| Volume in liters | 1 | 3.8 | 19 | 114 | 225 |
| Volume in US gallons | 0.26 | 1 | 5 | 30 | 60 |
| Parts per million of desired SO ₂ | mls of 10% SO ₂ Solution to add | | | | |
| 10 | 0.18 | 0.67 | 3.35 | 19.9 | 39.9 |
| 20 | 0.35 | 1.34 | 6.70 | 39.9 | 79.7 |
| 30 | 0.53 | 2.00 | 10.0 | 59.8 | 120 |
| 40 | 0.70 | 2.68 | 13.4 | 79.7 | 159 |
| 50 | 0.88 | 3.34 | 16.7 | 100 | 199 |
| 60 | 1.05 | 4.02 | 20.1 | 120 | 239 |
| 70 | 1.23 | 4.68 | 23.4 | 140 | 279 |
| 80 | 1.40 | 5.38 | 26.8 | 159 | 319 |
| 90 | 1.58 | 6.02 | 30.1 | 179 | 359 |
| 100 | 1.75 | 6.70 | 33.5 | 199 | 399 |

Chablis and Burgundy: Bottling

After fining, racking and cold settling the wine, allow the wine to settle for 3 more weeks. You are now finally ready for bottling. Make sure to rack and bottle the *Chablis* wine first to avoid contaminating the wine with malolactic bacteria present in the *Burgundy* wine.

You will rack your wines one last time into a clean carboy that you will be bottling out of. To this bottling carboy, add the appropriate, full amount of SO₂ solution (same as the first addition amount). Then bottle from this carboy.

Please review the bottling suggestions below.

Bottling Suggestions

1. Minimize any / as much movement as possible of the wine containers before bottling.
2. Place the carboys in a position where you can siphon out the wine into your bottles.

3. Clean all the bottles and sterilize in a dish washer. Try out capper and bottles a few days before bottling. All is well?
4. Make sure the bottles are sound, there are no cracks or chips on the crown lips of the bottle.
5. Keep a steady hand on the hose going into the carboy, another hand for filling bottles.
6. Suck the wine into the hose without air. When the wine in the hose allows you to move the filled part below the level of the wine in the carboy - you are siphoning.
7. Use the 3/8" siphon hose attached to the bottle filler. It may be better to get the siphon going and then pinch/bend off the hose, and then add the bottle filler. A stop cock placed near the end of the hose works well also. Make sure the hose reaches to the bottom of the bottles. You want to minimize oxidation when bottling. Purging the bottles with nitrogen (N₂) or carbon dioxide (CO₂) is not required, but it is a plus. CO₂ will add a little spritz to the wine.
8. Fill the bottles into the narrow part of the neck, with 1/2 inch or less air space.
9. Store wine at cool, constant temperature.
10. Drink first bottle 2 months after bottling. Let one case last at least 3 years and keep two bottles for 5 years.

Wine Additions and Movement

All additions to the wine, from yeast nutrient to the final bit of SO₂, should be noted in the log. This is your record, for the future as well. It is critical to keep an accurate, COMPLETE record of all SO₂ additions. Commercial wineries must also trace the containers the wine occupied throughout its cellar life.

Fax: 604-473-9463

Email: info@bosagrape.com

Fermenters Supply and Equipment

c/o Frank Sobetski
8410 "K" Plaza Suite #10
Omaha, NE 68127
Tel: 402-593-9171
Fax: 402-593-9942

Napa Fermentations

c/o Pat & Coleen Watkins
PO Box 5839, Napa CA, 94581
Tel: 707-255-6372

Presque Isle Wine Cellars

9440 Buffalo Road
North East, PA 16428
Tel: 800- 488-7492
Fax: 814-725-2092

[Keystone Homebrew Supply](#)

779 Bethlehem Pike (Rt. 309) Montgomeryville, PA 18936

Tel: 1-215-855-0100

Email: info@keystonehomebrew.com

[Stomp Them Grapes](#)

2563 15th Street
Denver, Colorado 80211

Tel: 1-303-433-6552

Fax: 1-303-433-6554

Email: sales@stompthemgrapes.com

Recommended Wine Testing Laboratories

Costs for the tests vary, examples are:

- pH = \$5.00 - \$12
- Alcohol by ebulliometer = \$15.00 - \$24.00
- Total Titratable Acidity (by pH) = \$7.50- \$13.00
- Malic acid (enzymatic method) = \$18-\$25

BC Wine Research Centre

Faculty of Agricultural Sciences
The University of British Columbia
Suite 231, 2205 East Mall
Vancouver, BC
Canada V6T 1Z4
Tel: 604-822-0418
Fax: 604-822-5143
email: hjjvv@interchg.ubc.ca

ETS Laboratories

899 Adams Street, Suite A
St. Helena, CA 94574
Tel: 707-963-4806
email: info@etslabs.com
web: www.etslabs.com

Lodi Winery Laboratory

P.O.Box 762, Victor, CA 95253
Tel:209.339.1990

Vinquiry

7795 Bell Road
Windsor, CA 95492-8519
Tel: 707-838-6312
Fax: 707-838-1765
Fax: 800-511-2122
email: vinquiry@aol.com

Thomas Henick-Kling

Department of Food Science & Technology
124 Food Research Laboratory
Geneva, NY 14456
Tel: 315-787-2277
email: th12@cornell.edu

Brock University

www.brocku.ca - 1842 King St E, Hamilton