

Sulfur Dioxide Additions

Using Potassium Metabisulfite

How much sulfur dioxide is added to wine depends on the pH. For example: A low pH wine needs less SO₂ than a high pH wine because a larger percentage of the SO₂ is available as molecular form of SO₂ to fight oxidation and microbial activity. The first table indicates how much free SO₂ (in parts per million) a wine should have. Remember that the sensory threshold for sulfur dioxide is around 50 ppm. This is another reason why a lower pH is preferred for wine.

To determine how much SO₂ should be added to a specific wine, answer the questions below. Write these numbers on a separate sheet of paper or in your records.

pH	Desired Free SO ₂ (ppm)
2.9	11
3.0	13
3.1	16
3.2	21
3.3	26
3.4	32
3.5	40
3.6	50
3.7	63
3.8	79
3.9	99
4.0	125

Based on the wine's pH, how much free SO₂ is needed to obtain 0.8 mg/L molecular SO₂? This is your target amount.

 A ppm

Based on the analysis of free SO₂, how much free SO₂ is present in the wine?

 B ppm

A - B = C, C being the amount of SO₂ needed.

 C ppm

D = the amount of wine (Liters) that needs SO₂.
To convert gallons to Liters, multiply the number of gallons by 3.785.

 D Liter

Is potassium metabisulfite being used for SO₂ additions?
If so, a factor of 1.75 is needed in the calculation.

 1.75

Potassium metabisulfite contains 57% sulfur dioxide (100/57 = 1.75).

Divide by 1000 to determine the amount in grams
of Potassium metabisulfite to add.

 1000

To calculate how much metabisulfite you need to add, first subtract the SO₂ already present in your wine from your target (A-B). The difference is C, multiply by the number of liters you want to treat (D). If you measure your wine in gallons, multiply the C term by the number of gallons and then multiply by 3.785. If you are using potassium metabisulfite multiply by 1.75 (potassium metabisulfite is only 57% sulfur dioxide). Next, divide by 1000 to get the number of grams of sodium metabisulfite you need to add. This calculation can be written as an equation:

$$A - B = C$$

$$C * D * 1.75 / 1000 = \text{grams potassium metabisulfite to be added}$$