# Sulfur Dioxide

Sulfur dioxide ($SO_2$) is used in wine making for several reasons. It retards the process of oxidation and browning, slows bacterial growth, and tends to improve the color of wines. It is normally measured in parts per million (ppm). Convenient forms are Campden tablets and potassium metabisulfite ($K_2S_2O_5$) powder. One Campden tablet dissolved in one gallon of must or juice will be approximately 30-50 ppm. One-quarter teaspoon (1 gram) $K_2S_2O_5$ dissolved in five gallons of wine will yield about the same, 30-50 ppm. Depending on the pH level of the wine $SO_2$ should be between 10 ppm and 100 ppm at all times to afford appropriate protection of the product.

It should be first introduced during grape crushing to a level of about 50 ppm to retard the growth of naturally occurring 'wild' yeasts, molds, and bacteria present on the skins of grapes. If not attenuated, these yeasts can easily start an uncontrolled fermentation with equally unknown results.

If malo-lactic fermentation is planned, free $SO_2$ levels should be kept at the lower range, i.e., 30 ppm.

Sulfite levels can easily be measured in wine samples with the use of Titrets, a glass vial containing a reagent, which will turn color in the presence of $SO_2$. Use of these vials is greatly simplifi ed through the use of a Tritrator tool.

Be aware that appropriate concentration for adequate protection of wine with free $SO_2$ is dependent upon the pH of the wine. The following table should be used as a guide in targeting free $SO_2$:

| pH | Free $SO_2$ |
|---|---|
| 3.00 | 13 |
| 3.05 | 15 |
| 3.10 | 16 |
| 3.15 | 19 |
| 3.20 | 21 |
| 3.25 | 23 |
| 3.30 | 26 |
| 3.35 | 29 |
| 3.40 | 32 |
| 3.45 | 37 |
| 3.50 | 40 |
| 3.55 | 46 |
| 3.60 | 50 |
| 3.65 | 57 |
| 3.70 | 63 |
| 3.75 | 72 |
| 3.80 | 79 |
| 3.85 | 91 |
| 3.90 | 99 |
| 3.95 | 114 |
| 4.00 | 125 |

Thus, if the wine is pH 3.2, free $SO_2$ at 21 ppm will provide adequate protection.

For more information, please contact us at 877.812.1137 or email support@juicegrape.com. Thank you.

 