



The Vineyard



wine and beer making supplies

"turning beginners into experts since 1983"

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The Sulphite in Wine Debate

It is impossible to make a sulfite-free wine, because wine yeast produces sulfur dioxide (SO₂) during the fermentation process. Wines with no added sulfite contain from 6 to 40 ppm of sulfite, according to most experts. Fermentation alone produces up to 10 ppm of free SO₂ sulphite.

Before you toss out your kit, check with your physician to make sure that you really are allergic to sulfites. Only a small percentage of the population (approximately 0.01%) is truly allergic to sulfites. These people lack the digestive enzyme sulfite oxidase and therefore can't metabolize sulfites. This small percentage of the population is also asthmatic, so many doctors test their patients for sulfite allergies when a diagnosis of asthma is made. These individuals typically know they're allergic from childhood and so know to avoid all foods and beverages that contain sulfites including, but not limited to, lunchmeats, processed salami, processed fruit juices, packaged seafood and dried fruits, as well as wine.

Sulfur dioxide gets a bad rap because of the government warning label plastered on wine bottles that is only targeted to this select group of consumers. Furthermore, many people blame sulfites for the group of symptoms commonly called the "wine headache." These symptoms are often simply caused by the alcohol in the product. There has been some speculation in the medical community that histamines — a naturally occurring substance found in foods like canned tuna and fruits — are a possible culprit of this "red wine malaise," but there has been no conclusive evidence so far. Ironically, many consumers drink white wine, thinking red wines have more sulfites, when actually white wines typically do.

The American and French governments limit the amount that commercial wineries can add to 350 mg/L of total SO₂. At this level it's almost certain you'd be able to pick up free SO₂ in the nose and higher levels the wine can become downright unpleasant to imbibe. You don't want to put too much SO₂ in your wine.

Recommended maximum level of 50 ppm, any higher and one can start to detect in nose of the wine. A minimum free SO₂ concentration should always be present to effectively protect wine, but without exceeding prescribed nominal levels. You should have enough sulfite to protect the wine from microbial spoilage but not so much that it can be detected when drinking it. The taste or smell of sulfite is considered a serious wine fault.

Also keep in mind the difference between free and total SO₂. Free SO₂, the portion that is not bound with aldehydes, sugars or other oxidizable substances in the wine, is the form that is available for anti-oxidant protection and anti-microbial activity. Free SO₂ will disappear over time into a wine, binding with the above-mentioned substrates, causing the ability of a wine to retard oxygen and microbes to decline as well.

If you bottle your wine within a year, chances are that the free SO₂ level will be very close to the level of the last sulfite addition unless the wine has been subjected to many rackings and over-exposure to air.

At the end of the day, using sulfites in winemaking is usually not a health issue. Judicious sulfite use can significantly increase the quality of your wine. International regulatory boards usually set legal levels at around 350 ppm total sulfur dioxide and most commercial wines are bottled with totals between 50-100 ppm. A little bit of SO₂, used wisely, goes a long way and won't hurt 9,999 out of 10,000 of us.

by Tom Corbett, Expert Home Winemaker and noted Wine Judge