

Wine making and sulfites.

Written by David Schmeltzle

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Potassium Metabisulfite is a stable source of sulfites in winemaking. The use of sulfur compounds is not a recent innovation. The Dutch shipping companies popularized the use of sulfur in the 16th century by refusing to ship any wines not treated. They insisted on the use of sulfites because the treated wines were the only ones that survived a long sea voyage without spoiling.

Sulfites work by releasing free sulfur dioxide, which inhibits yeast, mold and bacteria. It does this in two ways: one, it kills some of the organisms outright, and two, it blocks the surviving organisms' ability to reproduce. If your winemaking equipment is physically clean and you've rinsed it with a sulfite solution, nothing will grow on it for a short period of time.

To help prevent oxidation, sulfites are also added directly to wine after fermentation. Wine oxidation follows the same pattern that you see in the cut edge of an apple—the wine turns brown and takes on a flat 'cardboard' taste. Sulfur binds with the oxygen in the wine and prevents this damage.

Many people worry that they may be allergic to sulfites. True sulfite allergies are very rare. It's more likely that they have been exposed to higher level of sulfites in the past. In the 1970's restaurants would douse their salad bars with 2000 PPM (parts per million) sulfite solutions in order to keep the produce fresh. Mixing this with acidic foods, such as salad dressings or vinegar, would cause the salad to release clouds of sulfite gas, provoking unpleasant reactions.

What most people describe as wine headaches or a sulfite headache is a reaction to bio-amines in the wine. Bio-amines are compounds formed in wines for various reasons, one of the commonest being malolactic fermentation in the presence of sugar. Some commercial wineries start malolactic inoculation before the end of alcohol fermentation, guaranteeing the formation of bio-amines. Since wine kits don't go through malolactic fermentation they do not form bio-amines, and consequently don't provoke allergic reactions.

Some facts that might clear up any misunderstanding about sulfites

- Sulfites are a recognized food additive.
- All commercially available wines contain sulfites, even those labeled 'Kosher' or 'Organic.'

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The legally allowable amount in the US for wines labeled with “No Sulfites” is 30 PPM.

- Nearly all dried fruits and meats contain sulfites. Raisins, for instance, have up to 250 PPM. Frozen orange juice, bacon, dried noodles, all contain sulfite.

- All grape-based wines produce sulfites naturally during fermentation, up to a level of about 10 PPM. Even with no addition of sulfites, wines will still contain them.

This is not to say that sulfites are totally benign. People with asthma or emphysema should avoid inhaling sulfite powder or the gas that comes off the prepared solution. It can act as a bronchial constrictor, aggravating any breathing problems. Also, adding extra sulfites to wine is of no benefit, as it can spoil the flavor, giving it a ‘burnt match’ smell. It’s important to follow directions for sulfite additions.

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