USE OF SULFITES

Frequently Asked Questions

1. **What are sulfites and why are they used?**
   Sulfur dioxide(SO2) is a naturally occurring type of sulfite. Mined sulfur is heated into a liquid and used to protect wine from oxidizing. The same method has been used to protect wine from oxidization for centuries. Sulfur dioxide is used to protect the wine's character by inhibiting the growth of molds and bacteria and by stopping oxidation (browning) of the wine. In grape juice or wine, sulfur dioxide reacts with water molecules to form sulfites. A sulfiting agent can be added to foods and beverages in the form of sulfur dioxide (a gas) or as potassium bisulfite or metabisulfite (powders). In solution, all forms act the same way, releasing sulfur dioxide.
2. **Is the addition of sulfites to wine a new procedure?**
   No. There is strong evidence that sulfur dioxide was used by Egyptians and has been in regular use since Roman times. European winemakers have used sulfur dioxide to prevent wine spoilage for centuries.
3. **Are there also naturally occurring sulfites in wines?**
   Yes. Wine yeasts naturally produce up to 20 parts per million of SO2 during fermentation. There are also naturally occurring sulfites in other foods. In addition, our own bodies produce about 1,000 mg of sulfites a day through normal biochemical processes.
4. **When did the Contains Sulfites label become mandatory on wines?**
   In 1988, a Bureau of Alcohol, Tobacco, and Firearms ruling required all imported and domestic wines, beers and spirits to carry the label if they meet or exceed a threshold 10 parts per million sulfites. Because of naturally occurring sulfites, many wines fall under this ruling, regardless of whether sulfites have been added.
5. **Why the Concern?**
   The concern over sulfites in the United States arose with the use of extremely high levels of SO2 (1,000 to 3,000 ppm) on salad bars to prevent browning of fruits and head lettuce. This use of sulfites resulted in asthmatic reactions--some serious. In 1986 the FDA banned the use of sulfites on fresh fruits and vegetables while other foods and beverages must now be labeled if they contain sulfites--even those which contain very low levels.
6. **What percentage of the population do sulfites affect?**
   The reaction is a chemical sensitivity found in an extremely small percentage of the population. The majority of sulfite-sensitive people are asthmatic, but represent less than 3% of the asthmatics. We have sold to sulfite-sensitive people, always asking for their comments, and have received nothing but positive feedback.
7. **What is the sulfite level in Badger Mountain wines?**
   Grape fermentations naturally generate about 8-10 parts per million sulfites, so no other additions are made for four to five months. At the time of bottling, sulfur dioxide levels are adjusted to 20-30 parts per million. In addition we produce a line of wines with only naturally occurring sulfites--no sulfites are added. Wines actually need one of the lowest

levels of sulfites to ensure stability. Because of wine's alcohol content, naturally high acidity, and low pH, only low levels of SO2 need to be added to achieve stability.

8. **How does this level compare with other foods?**
   Dried fruit, such as apples and apricots are typically packaged with 500 to 1,000 ppm SO2. A typical egg contains about 6 ppm.
