

**STOCK SOLUTION OF SO<sub>2</sub>**

A third way to add potassium metabisulfite is to make a stock solution. Dissolve 5 level tablespoons of potassium metabisulfite in 1 quart water.

1/4 tsp stock solution = about 18 ppm SO<sub>2</sub> per gallon

1/2 tsp stock solution = about 36 ppm SO<sub>2</sub> per gallon

1 tsp stock solution = about 72 ppm SO<sub>2</sub> per gallon

**BALLING AND BRIX READINGS**

| DEGREES<br>BALLING/BRIX <sup>a</sup> | SPECIFIC<br>GRAVITY | % POTENTIAL<br>ALCOHOL YIELD <sup>a</sup> | DEGREES<br>BALLING/BRIX <sup>a</sup> | SPECIFIC<br>GRAVITY | % POTENTIAL<br>ALCOHOL YIELD <sup>a</sup> |
|--------------------------------------|---------------------|---|--------------------------------------|---------------------|---|
| 0.00                                 | 1.0000              | 0.00                                      | 14.50                                | 1.0575              | 8.34                                      |
| 0.50                                 | 1.0019              | 0.29                                      | 15.00                                | 1.0594              | 8.63                                      |
| 1.00                                 | 1.0038              | 0.58                                      | 15.50                                | 1.0616              | 8.91                                      |
| 1.50                                 | 1.0058              | 0.86                                      | 16.00                                | 1.0639              | 9.20                                      |
| 2.00                                 | 1.0077              | 1.15                                      | 16.50                                | 1.0660              | 9.49                                      |
| 2.50                                 | 1.0097              | 1.44                                      | 17.00                                | 1.0680              | 9.78                                      |
| 3.00                                 | 1.0116              | 1.73                                      | 17.50                                | 1.0701              | 10.06                                     |
| 3.50                                 | 1.0136              | 2.01                                      | 18.00                                | 1.0723              | 10.35                                     |
| 4.00                                 | 1.0155              | 2.30                                      | 18.50                                | 1.0746              | 10.64                                     |
| 4.50                                 | 1.0174              | 2.59                                      | 19.00                                | 1.0769              | 10.93                                     |
| 5.00                                 | 1.0193              | 2.88                                      | 19.50                                | 1.0793              | 11.21                                     |
| 5.50                                 | 1.0212              | 3.16                                      | 20.00                                | 1.0814              | 11.50                                     |
| 6.00                                 | 1.0232              | 3.45                                      | 20.50                                | 1.0836              | 11.79                                     |
| 6.50                                 | 1.0252              | 3.74                                      | 21.00                                | 1.0859              | 12.08                                     |
| 7.00                                 | 1.0271              | 4.03                                      | 21.50                                | 1.0881              | 12.36                                     |
| 7.50                                 | 1.0291              | 4.31                                      | 22.00                                | 1.0903              | 12.65                                     |
| 8.00                                 | 1.0313              | 4.60                                      | 22.50                                | 1.0926              | 12.94                                     |
| 8.50                                 | 1.0334              | 4.89                                      | 23.00                                | 1.0949              | 13.23                                     |
| 9.00                                 | 1.0372              | 5.45                                      | 24.00                                | 1.0994              | 13.80                                     |
| 10.00                                | 1.0393              | 5.57                                      | 24.50                                | 1.1017              | 14.09                                     |
| 10.50                                | 1.0414              | 6.04                                      | 25.00                                | 1.1041              | 14.38                                     |
| 11.00                                | 1.0434              | 6.33                                      | 25.50                                | 1.1063              | 14.66                                     |
| 11.50                                | 1.0454              | 6.61                                      | 26.00                                | 1.1086              | 14.95                                     |
| 12.00                                | 1.0475              | 6.90                                      | 26.50                                | 1.1109              | 15.24                                     |
| 12.50                                | 1.0495              | 7.19                                      | 27.00                                | 1.1133              | 15.53                                     |
| 13.00                                | 1.0515              | 7.48                                      | 27.50                                | 1.1155              | 15.81                                     |
| 13.50                                | 1.0536              | 7.76                                      | 28.00                                | 1.1180              | 16.10                                     |
| 14.00                                | 1.0556              | 8.05                                      |                                      |                     |   |

Note: Balling and Brix readings compared to specific-gravity readings in fresh juice and potential yield of alcohol in finished wine.

<sup>a</sup>1° Balling or Brix = 0.575% alcohol (approximate).

# Common Fining Agents

| Agent              | Description                                  | Use   | Rate   | Comments   |
|--------------------|--|---|--|--|
| <i>Bentonite</i>   | Fine, colloidal clay powder                  | clarification & protein stabilization                       | 1–2 g/gallon<br>(0.25–0.5 g/l)   | mix in hot water<br>1 day before using                 |
| <i>Gelatin</i>     | powder or liquid from skin & bones of cattle | white juice and young white wines to remove bitterness      | 0.06–0.5 ml/gal<br>(0.015–.125 ml/l)<br>or 0.5–1.0 g/gal<br>(0.125–0.25 g/l)       | can strip wines;<br>often counter-fined with Bentonite |
| <i>Egg Whites</i>  | fresh, mixed with a pinch of salt            | red wines only; gives supple finesse to finish              | 2–8 egg whites per 60-gal (225-l) barrel;<br>1/2 egg white per 5-gal (19-l) carboy | mix gently,<br>do not whip eggs                        |
| <i>Isinglass</i>   | powdered swim bladder of sturgeon fish       | delicate white wines; removes bitterness; gentle to wine    | 0.01–0.1 g/gal<br>(0.0025–0.025 g/l)   | mix with cold water;<br>does not settle well           |
| <i>Casein</i>      | powdered skim milk; potassium caseinate      | clarifies white wines and reduces oxidized flavors & aromas | 1–2 g/gal<br>(0.25–0.5 g/l)  | can substitute store-bought, powdered milk             |
| <i>Sparkolloid</i> | proprietary, alginate based                  | clarifies white wines, neutral flavor                       | 0.5–1.5 g/gal<br>(0.125–0.4 g/l)   | hot mix and cold mix formulations available            |