

PRESQUE ISLE WINE CELLARS

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COPPER SULFATE 1% TO REMOVE 'ROTTEN EGG' SMELL

This material is used to treat a wine which has developed a 'rotten egg' smell because of excess hydrogen sulfide (H₂S) production during fermentation. All wines produce H₂S early in the fermentation, but normally it will disappear quickly without any other treatment.

If the smell persists for several days, rack the wine to **aerate** it and the smell will in most cases disappear. If it persists add a complete nutrient such as Super Ferment or Fermaid, which we sell, or an equivalent nutrient which contains amino acids or other micro-nutrients. If the odor persists try racking one more time. You can also try to remove the odor by bubbling an inert gas such as nitrogen or carbon dioxide into the wine through a membrane that releases finely divided bubbles.

If the odor persists try adding copper sulfate according to the following protocol as soon as fermentation has finished. Copper Sulfate should be used with care since an excess will impart a bitterly astringent flavor and at a slightly higher level a haze and very quickly thereafter **toxicity**.

Prepare four (4) samples such as 375mL bottles labeled 'A', 'B', 'C' and 'D'. Add one drop of 1% copper sulfate to the first, 2 drops to the second, 4 drops to the third and 8 drops to the fourth bottle of wine to be tested.

You want to add the minimum level of Copper Sulfate that will remove the odor. A milliliter of liquid = 20 drops. Multiply the number of drops from your minimum effective sample by 10 to get drops per gallon to use on the entire batch. For example, a rate of two drops per 375 mL bottle would = 20 drops per gallon or 100 drops (5 mL) to a 5 gallon carboy or 50 mL to a fifty gallon tank or barrel. A 375 mL bottle is equivalent to a tenth of a gallon.

To avoid excess copper added to your wine we used to recommend fining with bentonite or Sparkolloid after treatment, but now we recommend adding yeast hulls (Springcell), or best of all adding 2 grams of live freeze dried yeast per gallon to help remove excess copper after treatment which is more effective.

If in doubt about using this treatment, don't hesitate to call us at (800) 488-7492 or e-mail to info@piwine.com to review these procedures.

If the wine isn't treated soon after the end of fermentation the hydrogen sulfide will convert into mercaptans and disulfides. In that case you can still use this procedure but should first add 0.25 gram of **ascorbic acid** (vitamin C) per gallon of wine to cause any disulfides produced to revert back into mercaptans which will allow copper sulfate to remove the offending odorants which it would not with disulfides. The process of reverting mercaptans back to disulfides may take up to 3 weeks.

The action that copper has on disulfides is immediate. But, best to give it 24 hrs before adding yeast/yeast hulls to counter-fine the extraneous copper.

WARNING! - Copper Sulfate is poisonous at low levels. Use it according to directions and don't exceed minimum effective doses, and if in doubt send a treated sample to a qualified laboratory such as the Wine laboratory at Geneva, NY or the Virginia Lab at VPI & SU for analysis.

10% to 1%: Add 9 parts of distilled water to 1 part 10% copper sulfate to achieve the 1% formula.