LODI WINERY LABORATORY
SALES AND SERVICES

CALCULATIONS AND TABLES

This reference section contains charts and other information that help with lab and cellar calculations.

English to metric and back

oz = ounce lb = pound g = gram G=gallon kg = kilogram mL = milliliter L = liter hL = hectoliter

1 oz (fl) = 30 mL	1mL = 1 cc = 0.035 fl. oz.	1 oz (wt) = 28.35 g	1 g = (100 mg) = 0.035oz
1 quart = 0.95 L	1 L = 1000 mL = 1.06 qt	1 lb (16 oz) = 454 g	1 kg (1000g) = 2.204 lb
1 G = 4 qt = 3785 mL	1 hL = 100 L = 26.4 G	1 ton = 907 kg	1 tonne = 1000 kg = 2204 lb

Units

1 lb/1000G	= 0.45 g/G	= 0.00012 g/mL	= 0.12 g/L	= 120 ppm
0.1g/100mL	= 100 ppm	= 0.75g/750mL	= 10 g/hL	
1 ppm	= 1/1,000,000	= 1 mg/L	= 0.0001 g/100 mL	= 0.1 g/hL

Addition formulas

Acid	+0.1g/100mL	= 3.8 g tartaric acid in 1 G wine = 8.3 lb tartaric/1000G = 7.4 malic/1000G = 7.1 lb citric/1000G
Carbonate	-0.1g/100mL	= 2.5g/G calcium carbonate = 5.5lb/1000G = 3.8g/G potassium carbonate = 8.3lb/1000G
Copper	+0.1ppm	= 0.15 mL of 1% CuSO4.5H20 solution/G of wine =0.1 mL of 0.05% CuSO4.5H20 in 120mL (4oz) of wine
Ascorbic Acid	+10ppm	=0.1mL of 1% solution in 100mL of wine = 3.78 mL/G = 37.85g ascorbic acid in 1000G of wine
SO2	+100ppm	= 0.76g K. meta/G = 7.6mL of 5% SO2 = 6.3mL of 6% SO2 = 45.4g K.meta/60G = 757g K.meta/1000G
Any Material	+1%	= 1g/100mL = 7.50g/750mL = 37.85 g/G
	+1lb/1000G	= 0.45 g/G = 0.012g/100mL = 0.09g/750mL

400 East Kettleman Lane, Suite 19, Lodi, CA, 95240
Phone: 209.339.1990 Fax: 209.339.1975

Normality
normality(1) x volume(1) = normality(2) x volume(2)
OR
amount to add = $\frac{\text{normality wanted x total volume wanted}}{\text{normality of stock solution}}$

Percentage
% additions: 1% (1) x volume (1) = % (2) x volume (2)
OR
volume to add = $\frac{\text{\% wanted x total volume wanted}}{\text{\% solution to be added}}$

Parts per million
ppm = (grams or mL) added x 1,000,000 ÷ wine volume in mL (multiply G by 3785 for mL)
amount to add in grams (or mL) = wine volume in mL ÷ 1,000,000 x ppm wanted

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