



## Useful Formulas

gallons to liters: liters = gallons x 3.79

liters to gallons: gallons = liters / 3.79

quarts to liters: liters = quarts x 0.95

liters to quarts: quarts = liters / 0.95

ounces to grams: grams = ounces x 28.4

grams to ounces: ounces = grams / 28.4

pounds to grams: grams = pounds x 454

grams to pounds: pounds = grams / 454

One teaspoon equals approximately 5 grams

Three teaspoons equal one tablespoon

Two tablespoons equals approximately 1 ounce

The sulfite and acid information below is only general information. Consult a good winemaking book or publication for more detailed information.

### Sulfite Information

In general, a sulfite level of 25 - 50 mg/L throughout the wine making process is desirable.

One campden tablet will yield approximately 75 mg/L of SO<sub>2</sub> in one gallon.

0.4 grams of Potassium or Sodium metabisulfite will yield approximately 75 mg/L of SO<sub>2</sub> in one gallon.

### Acid Information

Acid content, or titrateable acid, is not the same as pH. Briefly, titrateable acid content is how much acid is in solution while pH measures how strong the acid is.

Titrateable acid levels should be:

	must range	wine range
Dry Whites:	0.70 - 0.90%	0.50 - 0.75%
Dry Reds:	0.60 - 0.80%	0.40 - 0.55%
Sweet Whites:	0.75 - 0.80%	0.55 - 0.75%
Fruit:	0.65 - 0.85%	0.45 - 0.65%

Fahrenheit to Celsius: Celsius = (Fahrenheit - 32) x 0.56

Celsius to Fahrenheit: Fahrenheit = (Celsius / 0.56) + 32

specific gravity to Plato: Plato = 260 - (260 / specific gravity)

Plato to specific gravity: specific gravity = 260 / (260 - Plato)

Apparent Attenuation:

$$AA = \frac{(\text{original gravity} - \text{final gravity}) \times 1000}{(\text{original gravity} - 1) \times 1000}$$

Alcohol by volume:

$$abv\% = (\text{original gravity} - \text{final gravity}) \times 1000 \times 0.129$$

Alcohol by weight:

$$abw\% = (\text{original gravity} - \text{final gravity}) \times 1000 \times 0.102$$

### To increase the acid content

One gram of acid (tartaric, malic, citric) will raise the acid content of one liter of must or wine by approximately 0.10%.

Tartaric acid is the preferred acid to use.

Do not use citric acid to raise the acid level by more than 0.10%.

### To reduce the acid content

Potassium bicarbonate is preferred for acid reduction. If using calcium carbonate, it should not be used after fermentation.

2 grams per liter of potassium bicarbonate will reduce the acid content by about 0.10%