Volume Conversions:

1 mL = 0.035 fl oz
1 fl oz = 30 mL
1 L = 1000 mL
1 L = 0.2642 gal
1 gal = 3785 mL = 3.785 L
1 hL = 100 L = 26.4 gal
25 hL = 660 gal

1 L = 33.8 oz = 1000 mL
1 gal = 128 oz = 3785 mL = 3.78 L
1 qt = 32 oz = 946 mL = 0.946 L
1 pt = 16 oz = 473 mL = 0.473 = 0.473 L
1 cup = 8 oz = 237 mL
4 oz = 118 mL
2 oz = 59 mL
1 oz = 29.57 mL

Weight Conversions:

1 g = 1000 mg
1 kg = 1000 g = 2.2 lb
1 lb = 454 g = 0.4536 kg
10 k = 22 lb
1 metric ton = 1000 kg
1 metric ton = 2205 lb
1 US ton = 907 kg
1 US ton = 2000 lb

1 lb = 16 oz
1 oz = 28. 35 g
1 g = 0.03572 oz

Equivalent Units:

1 g/L = 0.10 g/100 mL
= 100 g/hL
= 100 mg/100 mL
= 1000 mg/L
= 1000 ppm
= 1.0 mg/mL
= 0.1% (wt/vol)

1 g/hL = 1 g/26.42 gal
= 0.038 g/gal
= 0.084 lb/1000 gal

Other Useful Conversions:

1 ppm = 1 mg/L
1 °Brix = 1 % sugar (wt/vol)
1 barrel = 60 gal = 227 L

1 lb/1000gal = 454 g/1000gal = 120 mg/L = 27.2 g/barrel = .0120g/L
1 kg/hL = 1000 g/hL = 10,000 mg/L = 2.271 kg/barrel = 10 g/L

Sulfur Dioxide and pH:

Table of molecular SO_2 concentration over pH

pH	% of Free Sulfur Molecular SO_2	ppm free for 0.8 Molecular	ppm free for 0.5 Molecular
2.90	7.5	11	7
2.95	6.6	12	7
3.00	6.1	13	8
3.05	5.3	15	9
3.10	4.9	16	10
3.15	4.3	19	12
3.20	3.9	21	13
3.25	3.4	23	15
3.30	3.1	26	16
3.35	2.7	29	18
3.40	2.5	32	20
3.45	2.2	37	23
3.50	2.0	40	25
3.55	1.8	46	29
3.60	1.6	50	31
3.65	1.4	57	36
3.70	1.3	63	39
3.75	1.1	72	45
3.80	1.0	79	49
3.85	0.9	91	57
3.90	0.8	99	62
3.95	0.7	114	71
4.00	0.7	125	78

Potassium Metabisulfite Additions:

Formula for PMBS addition:

$$\frac{\text{(gallons of wine)} \times (3.785) \times \text{(ppm of addition)}}{(1000) \times (0.576)} = \text{grams of PMBS to add}$$

3.785 is the conversion from gallons to liters
1000 converts mg/L (ppm) to g/L
0.576 is the fraction of SO_2 in PMBS

This formula can be simplified to:
(gallons of wine) x (ppm of addition) x (0.0066) = grams of PMBS to add

Preparing a Strong 10% Stock Solution:
Dissolve 10 grams of Potassium Metabisulfite into 100 mL of water. For additions of sulfite into large lots, use the information provided in the following table.

10% Solution of Metabisulfite

	(Desired final SO_2 concentration in ppm)						
Must/Wine	**10**	**20**	**25**	**30**	**40**	**50**	**75**
(gallons)	*(Add milliliters of 10% solution)*						
1	0.6	1.3	1.6	2.0	2.6	3.3	4.9
5	3.3	6.6	8.2	9.9	13.1	16.4	24.6
10	6.6	13.1	16.4	19.7	26.3	32.9	49.3
25	16.4	32.9	41.1	49.3	65.7	82.1	123.2
50	32.9	65.7	82.1	98.6	131.4	154.3	246.4

Preparing a Weak 3% Stock Solution:
Dissolve 3 grams of Potassium Metabisulfite into 100 mL of water. For additions of sulfite into large lots, use the information provided in the following table.

3% Solution of Metabisulfite

	(Desired final SO_2 concentration in ppm)				
Must/Wine	**10**	**21**	**33**	**43**	**65**
(gallons)	*(Add tablespoons of 3% solution)*				
1	0.15	0.32	0.50	0.66	1.00
5	0.75	1.60	2.50	3.30	5.00
10	1.50	3.20	5.00	6.60	10.00