Inspiring innovation.

DISTRIBUTION OF FREE SO_2

FROM pH 3.0 – 4.0 (PKA = 1.81)

pH	% Molecular SO_2 (m)	% Bisulfite (HSO_3-)	% Sulfite (SO_3=)	Minimum ppm of Free SO_2		
				0.8 molecular	0.5 molecular	0.3 molecular
3.00	6.1	93.9	0.012	13	8	5
3.05	5.3			15	9	6
3.10	4.9	95.1	0.015	16	10	6
3.15	4.3			19	12	7
3.20	3.9	96.1	0.019	21	13	8
3.25	3.4			23	15	9
3.30	3.1	96.8	0.024	26	16	10
3.35	2.7			29	18	11
3.40	2.5	97.5	0.030	32	20	12
3.45	2.2			37	23	14
3.50	2.0	98.0	0.038	40	25	15
3.55	1.8			46	29	17
3.60	1.6	98.4	0.048	50	31	19
3.65	1.4			57	36	21
3.70	1.3	98.7	0.061	63	39	23
3.75	1.1			72	45	27
3.80	1.0	98.9	0.077	79	49	30
3.85	0.9			91	57	33
3.90	0.8	99.1	0.097	99	62	38
3.95	0.7			114	71	43
4.00	0.7	99.2	0.122	125	78	43

This table shows the percent of molecular SO_2 present in the pH range from 3.0 to 4.0. Multiplying this percent by the free SO_2 will give the ppm (mg/L) of molecular SO_2. To attain a desired level of molecular SO_2, the amount of free SO_2 needed can be determined by dividing the desired molecular (mg/l) by the percent available at the given pH. For example, if the wine pH is 3.5 and the desired molecular level is 0.8 mg/L, then the needed amount of free SO_2 would be calculated 0.8/0.02 = 40ppm free SO_2.

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