

## appendix b

# CO<sub>2</sub> gauge pressure reference chart

**Table 1. Determination of CO<sub>2</sub> application pressure given volumes of CO<sub>2</sub> and temperature**

Vol. CO <sub>2</sub>	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1
Temp. °F	PSI	PSI	PSI	PSI	PSI	PSI	PSI	PSI	PSI	PSI	PSI
33	5.0	6.0	6.9	7.9	8.8	9.8	10.7	11.7	12.6	13.6	14.5
34	5.2	6.2	7.2	8.1	9.1	10.1	11.1	12.0	13.0	14.0	15.0
35	5.6	6.6	7.6	8.6	9.7	10.7	11.7	12.7	13.7	14.8	15.8
36	6.1	7.1	8.2	9.2	10.2	11.3	12.3	13.4	14.4	15.5	16.5
37	6.6	7.6	8.7	9.8	10.8	11.9	12.9	14.0	15.1	16.1	17.2
38	7.0	8.1	9.2	10.3	11.3	12.4	13.5	14.5	15.6	16.7	17.8
39	7.6	8.7	9.8	10.8	11.9	13.0	14.1	15.2	16.3	17.4	18.5
40	8.0	9.1	10.2	11.3	12.4	13.5	14.6	15.7	16.8	17.9	19.0
41	8.3	9.4	10.6	11.7	12.8	13.9	15.1	16.2	17.3	18.4	19.5
42	8.8	9.9	11.0	12.2	13.3	14.4	15.6	16.7	17.8	19.0	20.1

\* Chart assumes sea-level altitudes. Add 1 psi for every 2,000 ft. above sea level.

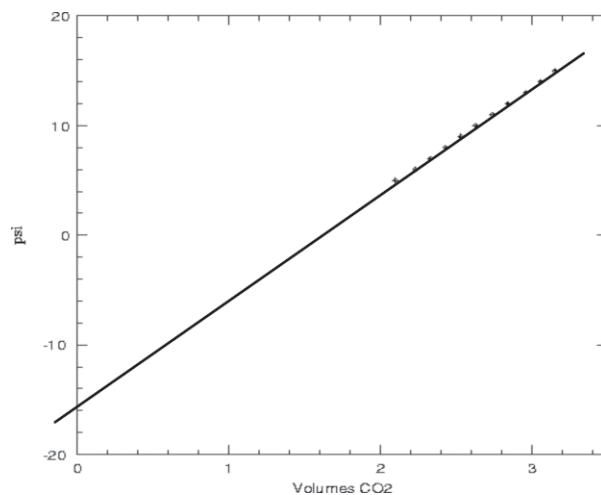
\* Chart Reference

- Based on Data from "Methods of Analysis", American Society of Brewing Chemists, 5th Edition – 1949 (attached)

- Correlation of pressure versus volumes of CO<sub>2</sub> at a given temperature are linear
- $y = mx + b$  was used to determine the pressure at a known temperature and CO<sub>2</sub> volume
- Example: at 33°F and 2.6 volumes of CO<sub>2</sub> the line slope is 9.54 and the y-intercept is -15.034, thus  
 $y (\text{CO}_2 \text{ pressure}) = m (\text{slope}) \times (\text{CO}_2 \text{ volumes}) + b (\text{y - intercept})$

$$y = 9.54 * 2.6 \text{ volumes} + (-15.034)$$

$$y = 9.8 \text{ psi CO}_2 \text{ pressure}$$



## Figuring ideal gauge pressure of straight CO<sub>2</sub> when carbonation level is not known:

1. Set the regulator pressure to 5 psi.
2. Tap a fresh keg. Make sure the keg has been in the cooler long enough to be at the cooler temperature.
3. Pour a small amount of beer through the faucet.
4. Observe the beer in the draught line directly above the keg coupler (with a flashlight if necessary), inspecting for bubbles rising up from the beer in the keg.
5. If bubbles are present, raise the regulator pressure 1 psi.
6. Repeat steps 3 - 5 until no bubbles are present.

This is the lowest pressure at which the gas in the beer is not escaping. This is your ideal gauge pressure.