

**Perspectives  
on  
Draught Beer Quality**

**S.N.O.B.s  
2/6/12**





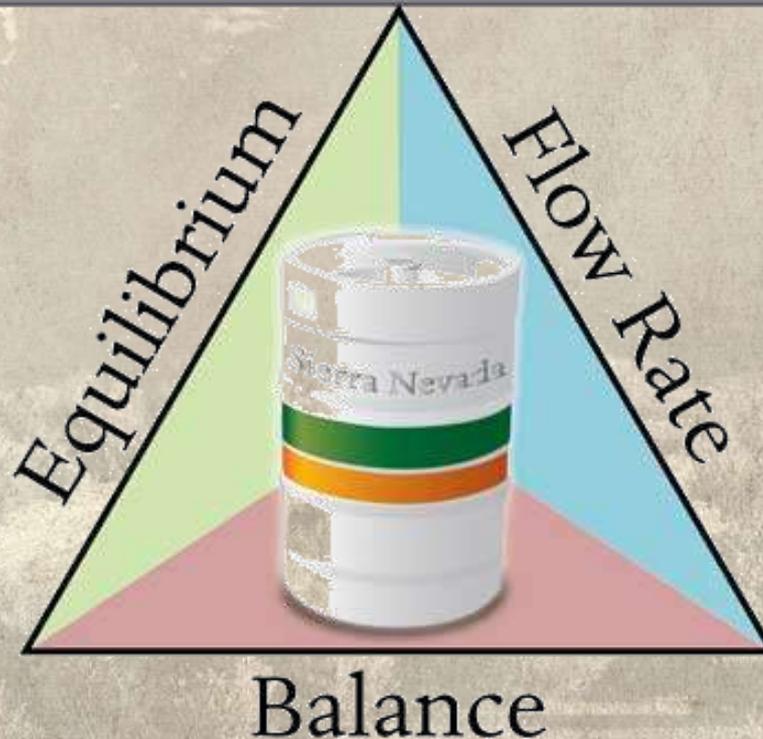
# **Draught Beer Basics: Four Keys to Excellent Beer Service**

Temperature is key to pouring a perfect draught beer  
Balanced and maintained  
Beer clean glass  
Proper pouring



# Balanced System *Great Taste, No Waste*

Gauge psi = Pounds restriction + gravity



# Beer-clean Glass *No Soil, No Oil*

NO fat, oil, grease residue

NO bacteria, film

NO odor like smoke, sanitizer

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YES: Fresh glass every serving

YES: Cleaned, rinsed, sanitized

YES: Passes sheeting, salt, lacing tests



# One-inch Head

Nozzle – safety & hygiene

45 degree angle

Straighten

Craft one-inch head

Off-gas, de-gas, release, escape

Appearance, texture, flavor, insulates, less-filling



# Carbon Dioxide Sensory Attributes

## Taste

-releases carbonic acid (lightly acidic)

## Mouthfeel

“tingle/sparkle/spritz/fizz/prickle/sting/effervescent”

-pain/pleasure sensation

## Head

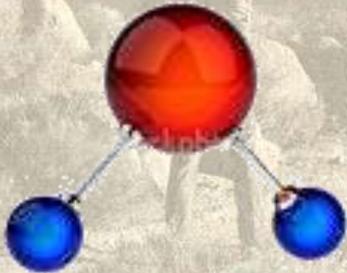
-breakout carries flavors (hop oil)

-volatile delivery vehicle

## Bubbles

-scrubbing /palate-cleansing

Nitrogen smooth texture/suppress hop flavor



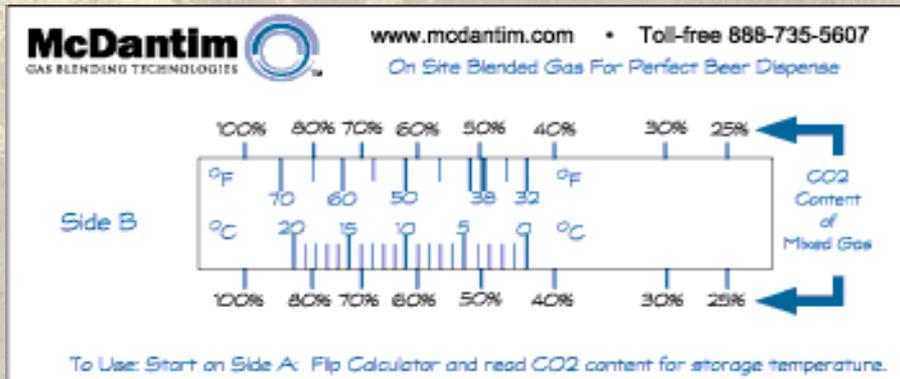
# CO<sub>2</sub> Solubility Chart

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.

# McDantim Slide Rule



# Draught Beer Necessities

Cold – 38 degrees F  
(Warm = 4x faster than cool)

Clean

Controlled



# Temperature Chart

Start Temp	Time to 38° F
50° F	25 hrs
48° F	23.5 hrs
46° F	21 hrs
44° F	18 hrs
40° F	7 hrs
38° F	0 hrs

Time	Temp
0 hrs	38° F
1 hrs	39° F
2 hrs	41° F
3 hrs	42° F
4 hrs	43° F
5 hrs	45° F
6 hrs	48° F





# The Facts About Draught System Cleaning

The importance of draught system cleaning  
How clean is your system?  
Electric pump cleaning

# Draught Hygiene

Homogenous mass of organic & inorganic

Bacteria, mold, wild yeast

Cereal protein

Hop resin

Minerals

System deterioration = flavor degradation



# Draught Hygiene

Challenges

Cold

Restrictive

Time-consuming

Draught systems pose numerous obstacles for hygiene



# Draught Hygiene

Cleaning agent – Caustic solution 2-3% (Read safety guidelines for proper handling!)

Temperature – 90 degrees F

Method – pump recirculation 15 minutes

Frequency – every two weeks  
(tubing & hardware)



# Draught Hygiene

Off-tastes from system limitations

-loss of carbonation (flat), oxygen ingress (stale)

Off-tastes from microbial infection

<i>Pediococcus</i>	diacetyl	“buttery”
<i>Lactobacillus</i>	lactic acid	“dairy sour”
<i>Acetobacter</i>	acetic acid	“vinegar”
<i>Pectinatus</i>	hydrogen sulfide	“rotten egg”

# Benefits of Stainless Steel

Inert, non-reactive

Stable, non-leaching

Corrosion resistant

(chemicals, carbonation, low pH)

Smooth surface

Hygiene



# Metal Parts in Draught Dispense

Probe (coupler)

Tailpiece

Splicer

Wall bracket

Shank

Faucet

(All available in stainless steel & brass)



SIERRA NEVADA BREWING CO.  
CHICO, CA.

# Flavor

## Brass

Copper 700-800 ppb  
Muted/restrained aroma  
Slight loss of CO<sub>2</sub>  
Harsh/astringent  
Metallic coating tongue  
Overall taint

## Stainless Steel

Copper 50-100 ppb  
Expressive hoppy aroma  
Carbonated mouthfeel  
Malt/hop taste  
Clean finish, hop bitter  
Overall pure

# Info for Everyone

Resource

Access

[www.draughtquality.org](http://www.draughtquality.org)

