

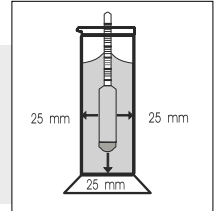
# Coffee Hydrometer

The Coffee Hydrometer is used to know the quantity of coffee in water.

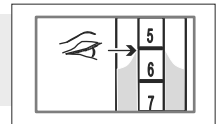
0% - 7% soluble concentration of coffee - div. 0.2%

## How to use the Coffee hydrometer ?

Use a cylinder large enough to accommodate the coffee hydrometer: a glass cylinder of 500 ml is recommended . The cylinder and the hydrometer must be very clean and the coffee should not have any residues.



The reading is upper the meniscus



## Temperature correction

The Coffee hydrometer is calibrated to be used at a temperature of 140°F (60°C). If the temperature is different the readings must be corrected by using the table 1.

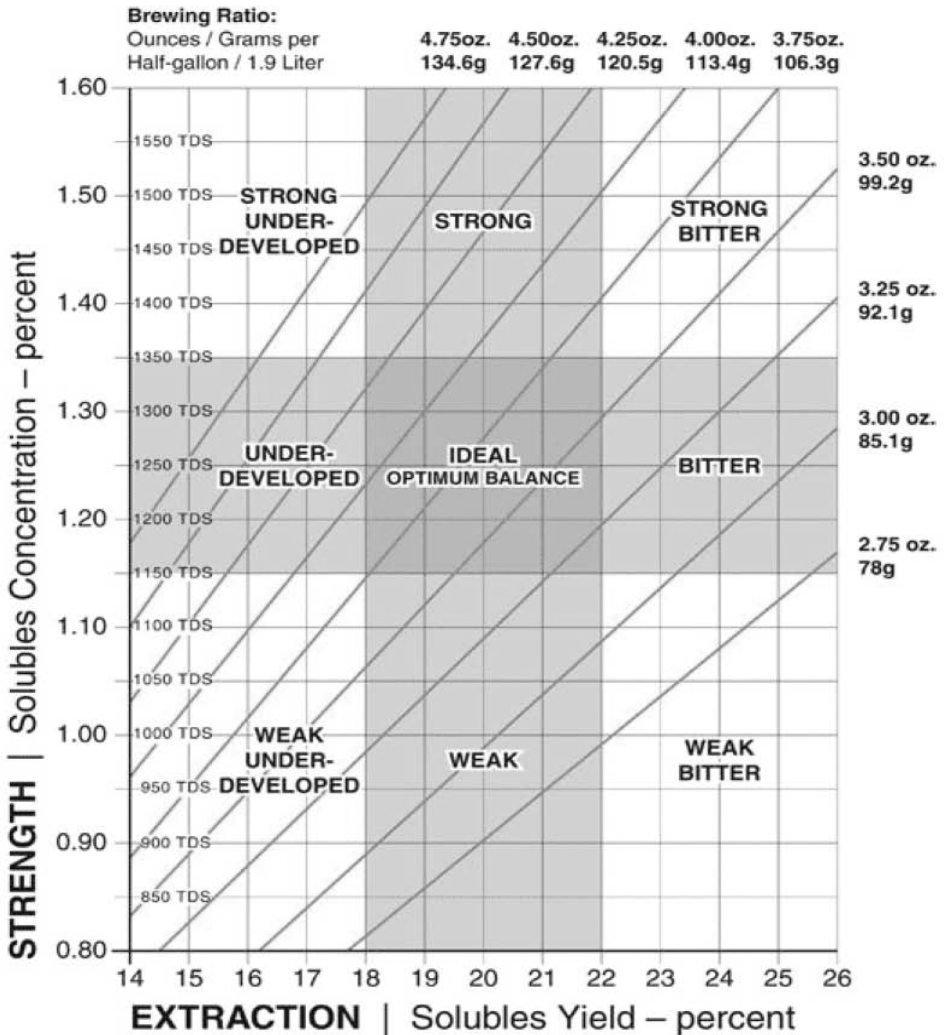
**Example** Hydrometer reading = 3.9 Temperature reading = 143°F.  
On the table across from 143°F, you will see that a correction of 0.88 must be added. Therefore, the corrected reading is 3.9 + 0.88 = 4.75.

Table1

Temperature correction table			
Temperature °F	Subtract (% coffee)	Temperature °F	Add (% coffee)
110	- 7.70	<b>140</b>	<b>0.00</b>
115	- 6.50	141	+ 0.29
120	- 5.30	142	+ 0.59
125	- 4.10	143	+ 0.88
130	- 2.75	144	+ 1.18
131	- 2.49	145	+ 1.47
132	- 2.21	146	+ 1.76
133	- 1.94	147	+ 2.06
134	- 1.66	148	+ 2.35
135	- 1.38	149	+ 2.65
136	- 1.10	150	+ 2.96
137	- 0.83		
138	- 0.55	155	+ 4.50
139	- 0.27	160	+ 6.10

# WHAT IS THE BEST RATIO OF CONCENTRATION ?

This table shows the different results by crossing the result of the hydrometer in % of soluble concentration of coffee - Right and up side of the table (½ gallon converted in % of soluble concentration of coffee) and the soluble yield in % Bottom of the table



■ **How to use the chart**

If you use 4 oz (5.99%) of coffee and the strength of the brew measures 1.40%, follow the line labelled 4.00 oz. Down, the diagonal line to the 1.40% grid line. **This coffee would be strong.** To move your brew into the box labelled "IDEAL", you need to decrease the extraction by decreasing the brewing time and/or increasing the grind size. The table 2 shows the relation between OZ per ½ gallon and the % of coffee.

■ **Strength-soluble Concentration**

The goal for percentage of coffee flavouring material to the amount of water in the finished cup is 1.15% to 1.35%, measured by your Brew Strength Meter or Hydrometer.

■ **Brewing Ratio**

The relation between the amount of ground coffee used per half-gallon of water (as shown by the diagonal red lines) and extraction.

■ **Extraction-Soluble Yield**

The ideal percentage of coffee material removed is 18% to 22% of the soluble.

■ **Optimum Balance**

Balancing strength and extraction creates the ideal cup of coffee. This standard is designated the "**Golden Cup**" by the Specialty Coffee Association of America.

Table 2

Conversion chart between OZ per ½ gallon and % of coffee	
OZ per ½ gallon	% of coffee
2.00	3.00
2.25	3.37
2.50	3.75
2.75	4.12
3.00	4.50
3.25	4.87
3.50	5.25
3.75	5.62
4.00	5.99
4.25	6.37
4.50	6.74
4.75	7.12

Temperature		Correction % café
°F	°C	
112.9	45.0	-7
117.1	47.3	-6
121.3	49.6	-5
125.4	51.9	-4
129.2	54.0	-3
132.9	56.0	-2
136.4	58.0	-1
140.0	60.0	0
143.3	61.9	1
146.7	63.7	2
150.0	65.6	3
153.3	67.4	4
156.6	69.2	5
159.7	70.9	6



## ■ How to convert a hydrometer reading to percent soluble solids?

**Example** Find the hydrometer reading on the chart, read to the left column, and add the number at the top of the column. Use the closest hydrometer reading listed on the table 3.

Hydrometer reading at 140°F is 5.27 (5.28 is the closest value on the table).

1.30 is found on the left column and 0.03 is found on the top.

Therefore, 1.33 is the percent of soluble solid in the beverage.

**Correlation of Hydrometer Readings at 140° F and Soluble Solids in Beverage Coffee**

Table 3

	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.00	0.00	0.04	0.08	0.12	0.16	0.20	0.24	0.28	0.32	0.36
0.10	0.40	0.44	0.48	0.52	0.56	0.60	0.64	0.67	0.71	0.75
0.20	0.79	0.83	0.87	0.91	0.95	0.99	1.03	1.07	1.11	1.15
0.30	1.19	1.23	1.27	1.31	1.35	1.39	1.43	1.47	1.51	1.55
0.40	1.59	1.63	1.67	1.71	1.75	1.79	1.83	1.87	1.91	1.94
0.50	1.98	2.02	2.06	2.10	2.14	2.18	2.22	2.26	2.30	2.34
0.60	2.38	2.42	2.46	2.50	2.54	2.58	2.62	2.66	2.70	2.74
0.70	2.74	2.82	2.86	2.90	2.94	2.98	3.02	3.06	3.10	3.14
0.80	3.18	3.22	3.26	3.30	3.34	3.37	3.41	3.45	3.49	3.53
0.90	3.57	3.61	3.65	3.69	3.73	3.77	3.81	3.85	3.89	3.93
1.00	3.97	4.01	4.05	4.09	4.13	4.17	4.21	4.25	4.29	4.33
1.10	4.37	4.41	4.45	4.49	4.53	4.57	4.61	4.65	4.69	4.73
1.20	4.76	4.80	4.84	4.88	4.92	4.96	5.00	5.04	5.08	5.12
1.30	5.16	5.20	5.24	5.28	5.32	5.36	5.40	5.44	5.48	5.52
1.40	5.56	5.60	5.64	5.68	5.72	5.76	5.80	5.84	5.88	5.92
1.50	5.96	6.00	6.03	6.07	6.11	6.15	6.19	6.23	6.27	6.31
1.60	6.35	6.39	6.43	6.47	6.51	6.55	6.59	6.63	6.67	6.71
1.70	6.75	6.79	6.83	6.87	6.91	6.95	6.99	7.03	7.07	7.11

$$\text{Percent Soluble Solids} = \frac{\text{Hydrometer Scale Reading}}{3.97}$$