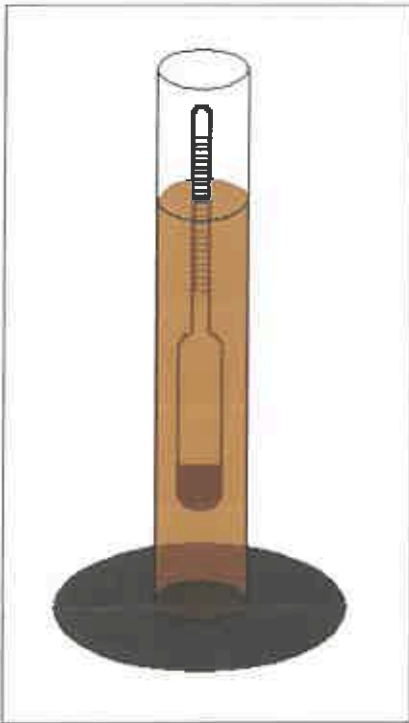




Midwest Homebrewing & Winemaking Supplies  
5825 Excelsior Blvd.  
St. Louis Park, MN 55416  
952-925-9854 • 888-449-2739  
[www.midwestsupplies.com](http://www.midwestsupplies.com)

## How do you take a **hydrometer** reading and what is it used for anyway?



Hydrometers are a tool that every homebrewer and winemaker should become familiar with because they can tell you so much about what is going on. A hydrometer is a glass tube with a weight on one end. Its purpose is to measure the difference in gravity (density) between pure water and water with sugar dissolved in it. The hydrometer takes this reading by floating in the liquid.

It is best to use a **hydrometer test jar** to take your samples. Test jars are made of plastic or glass and allow you to take a small sample to be tested. Newer winemakers and brewers tend to take a lot of samples. We know what the directions say on some kits, but it is usually best to keep the sample down to a minimum. You are not going to gain that much information by taking samples all the time. A lot of old wine recipes have you take samples almost daily because they were using inferior equipment and yeast. Today, once everything starts fermenting, you have very little to worry about. Keep in mind that every time you open your fermenter you are allowing the possibility for bacteria to be introduced. Use a turkey baster or wine thief to take your samples. And of course, make sure everything is sanitized before use.

On most of the hydrometers made today you have three scales for taking measurements. The three scales are potential alcohol, Balling, and specific gravity. Which scale you use will depend on how specific you want your reading to be. The easiest scale to use is the potential alcohol.

### How to take a hydrometer reading using the potential alcohol scale:

- Sanitize all equipment that will come in contact with your wine or beer.
- Take a sample of the liquid before you add the yeast.
- Place the sample in the hydrometer test jar. If you have a **Wine Thief**, you do not need to do this as the Wine Thief doubles as a test jar.
- Place the hydrometer in the test jar. Make sure the hydrometer is not hitting the sides of the jar as this will affect your reading.
- Spin the hydrometer as you would a top to remove any bubbles that might be clinging to it.
- With the sample at eye level, look to see where the liquid crosses the markings.
- Write down the reading. For beer it will usually be around 5%, for wine around 12%.
- Let the beer or wine ferment completely. You'll know it's done when you see one bubble a minute or less coming out of the airlock.
- Take a second reading just before bottling.
- To determine the amount of alcohol you subtract the second reading from the first. For example if your first reading was 5% and your second reading is 1%; take  $5-1=4\%$ . That is the amount of alcohol.

The Balling scale is not usually used in America, but we'll tell you how to use it anyway.

### **How to take a hydrometer reading using the Balling scale:**

- Sanitize all equipment that will come in contact with your wine or beer.
- Take a sample of the liquid before you add the yeast.
- Place the sample in the hydrometer test jar. If you have a [Wine Thief](#), you do not need to do this as the Wine Thief doubles as a test jar.
- Place the hydrometer in the test jar. Make sure the hydrometer is not hitting the sides of the jar as this will affect your reading.
- Spin the hydrometer to remove any bubbles that might be clinging to it.
- With the sample at eye level, look to see where the liquid crosses the markings.
- Write down the reading. For beer it will usually be around 10, for wine around 22.
- Take that number and multiply it by 0.55. This will give you your potential for alcohol. So, take  $22 \times 0.55 = 12.1\%$

The Balling scale is a little less accurate version of the Brix scale. Typically, the Brix scale is used when using a [refractometer](#). The Balling scale is a quick way to get a rough idea of how much alcohol will be created.

The most common scale used today in America is the specific gravity scale. The reason it is used so much is because it is easy, and pretty accurate. It isn't going to be as accurate as a \$600 machine, but it is pretty good for most home brewers and winemakers.

### **How to take a hydrometer reading using the specific gravity scale:**

- Sanitize all equipment that will come in contact with your wine or beer.
- Take a sample of the liquid before you add the yeast.
- Place the sample in the hydrometer test jar. If you have a [Wine Thief](#), you do not need to do this.
- Place the sample in the hydrometer test jar. If you have a [Wine Thief](#), you do not need to do this as the Wine Thief doubles as a test jar.
- Spin the hydrometer to remove any bubbles that might be clinging to it.
- With the sample at eye level, look to see where the liquid crosses the markings.
- Write down the reading. For beer it will usually be around 1.046, for wine around 1.090. These numbers will vary greatly depending on your recipe, so follow what your recipe says it should be.
- Let the wine or beer ferment completely and then take a reading just before bottling.
- Write that number down.
- The equation to figure out the amount of alcohol is this:  $(S.G. - F.G.) / 0.776$ .  $1.050 - 1.010 = .04$ .  $.04 / 0.776 = 5.2\%$

There are a lot of calculators on the web to make this easier, so do a quick web search and the math can be done for you.

**Hydrometers will read 1.000 in 60°F distilled water.  
Follow this conversion chart to account for temperature variances.**

Degrees Fahrenheit	Adjustment to Reading
40	Subtract .002
50	Subtract .001
60	CORRECT
70	Add .001
80	Add .002
90	Add .004
100	Add .005
110	Add .007
120	Add .008
130	Add .010
140	Add .013
150	Add .015

The obvious reason why we use a hydrometer is to figure out our alcohol percentage. But, a hydrometer can be very handy for figuring out if there is a problem. If you suspect that the yeast has not started fermenting, take a hydrometer reading to find out. If it is the same, or close to your starting gravity, then you know there is a problem. Check out our troubleshooting sections in the [FAQ library](#) for problems with fermentation.