Introduction

Everything You Need to Know about Alcohol, in about Twelve Hundred Words

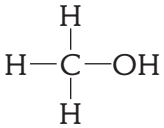
If you're reading this book, you've probably had an adult beverage or two in your lifetime. Maybe you've even taken the time to read the labels on your bottles or to chat with your bartender. In other words, there's a pretty good chance you know the basics of what alcohol is, how it's made, and so on. If you feel confident in your background knowledge, feel free to skip ahead to chapter 1.

Chapter 1, Fermentation, p. 19

If, however, you want to brush up on the fundamentals before moving on, this introduction should get you up to speed.

What Is Alcohol?

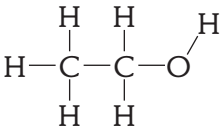
Chemically, an alcohol is an organic molecule that has a hydroxyl group (an oxygen atom connected to a hydrogen atom) attached to a saturated carbon atom:



Methanol: The simplest alcohol.

(You can forget that definition right away if you like—we're not going to bother with it again.) In organic chemistry, you can tell which kind of chemical something is by its suffix; alcohols have names that end in *-ol*.

When we talk about alcohol in our daily lives, we're pretty much always referring to ethanol, a structurally simple alcohol that makes us feel nice when we drink it:



Ethanol: The second-simplest alcohol.

Ethanol mixes with water in any proportion—and since you're mostly water, it spreads throughout your entire body pretty quickly. Ethanol does some funny things to your body and your mind along the way, and it's particularly mischievous in its dealings with your central nervous system. You know this as "getting drunk."

Ethanol is naturally produced by a variety of microorganisms, most of which are yeasts. These microorganisms consume sugars and they produce, among other things, both ethanol and carbon dioxide. This process is one example of the broader suite of microbial activities that we call *fermentation*. Leavened bread, vinegar, and many other nonalcoholic products are made by different kinds of fermentation, but let's leave those aside for now.

Alcoholic beverages made by fermentation include wine (made from grapes), beer (made from cereal grains, especially barley), cider (made from apples), sake (made from rice), and mead (made from honey). Anything that contains sugar can be

fermented under the right circumstances—carrots, milk, palm tree sap, you name it.

Humans have been taking advantage of fermentation for thousands of years. More recently, people figured out that they could separate the liquids in a fermented mixture by boiling and recondensing them, resulting in a finished product with a higher concentration of alcohol. This process is called *distillation*. The tool we use for distilling is a *still*.

Alcoholic beverages made by distillation are often referred to as *hard liquors*, a category that includes brandy (made from grapes), whiskey (made from cereal grains), rum (made from sugarcane and its derivatives), and tequila (made from blue agave—which is not, as some people seem to think, a cactus). Vodka and gin (generally, but not necessarily, made from grains) also fall under this heading.

Ethanol usually makes up between 5 and 15 percent of the volume of a fermented drink. This measurement is commonly expressed as *alcohol by volume*, or ABV. It means exactly the same thing either way—about 14 percent of the liquid in a 14 percent ABV bottle of wine is ethanol.

Another measurement of ethanol content in alcoholic beverages is *proof*. It's usually used to describe distilled spirits, and is represented by the degree symbol (°). The simplest way to remember what proof means is to think of it as twice the ABV of a given spirit. A vodka that is 40 percent alcohol by volume would be 80 proof, which might be written on the bottle as 80°. That's a standard proof for distilled spirits, though hard liquors are often bottled as low as 70° or as high as 120°, and there's a whole class of rums bottled at 151° specifically.

Hard liquor comes in bottles of various sizes; two of the most common are the *fifth* and the *handle*.

A fifth is a 750-milliliter (mL) bottle. Spirits used to be sold in bottles that held one-fifth of a gallon; these were sensibly, if unimaginatively, called fifths. A 750 mL bottle holds just slightly less than one-fifth of a gallon, so the name stuck even as the

measurements changed. A standard wine bottle holds the same volume, but it's usually referred to as a bottle rather than a fifth.

A handle is a 1.75-liter (L) bottle. Bottles this size are often, but not always, designed with a handle to make them easier to carry—which is how we get the name.

There are other categories of alcoholic beverages we haven't yet mentioned. Port, sherry, and vermouth are *fortified wines*, or wines to which a distilled spirit has been added.

Liqueurs are distilled spirits to which sugar and flavorings (usually fruit or spices) have been added. This is a very broad category. It contains purpose-made liqueurs, as varied as Chartreuse, triple sec, and Irish cream, as well as flavored versions of familiar spirits, like Plymouth's sloe gin or Patrón's tequila-based Citrónge. In the United States, if something is labeled as a cordial, schnapps, flavored brandy, cream liqueur, or crème liqueur (crème de menthe, crème de cacao, etc.), chances are it belongs in this group.

Bitters are a class of drink that is made by adding highly aromatic herbs and spices to distilled spirits (or, very occasionally, to glycerin). They tend to be quite bitter. *Potable bitters*, such as Campari, are consumed either mixed or on their own, while *nonpotable* bitters, like Angostura and Peychaud's, are used a few drops at a time to add flavor to other drinks. *Bitters* is both singular and plural.

Then of course there are *cocktails*, which are combinations of the various liquids I've mentioned thus far with fruits, herbs, syrups, nonalcoholic beverages, and each other. Cocktails usually have a hard liquor as their primary ingredient (often called the *base spirit*), as is the case with the whiskey in an Old Fashioned or the gin in a Martini. A cocktail is a single-serving drink; a similar beverage made in much larger quantities would be a *punch*.

Finally, a note on terminology: *spirits* and *liquor* have slightly fluid meanings. Most of the time, they specifically imply hard liquor; but they can also be used to refer to the whole universe of alcoholic beverages. To spare us all the trouble of endlessly

repeating the phrase, "beer, wine, and spirits," which is also not comprehensive, I'll use these terms in their more inclusive sense from time to time throughout the book. The meaning should always be clear from the context.

If you would like a more detailed taxonomy of spirits, and don't mind getting it from an erudite curmudgeon whose brand recommendations are half a century old, I suggest you pick up a copy of David Embury's *The Fine Art of Mixing Drinks*—a classic in the field of cocktail literature. David Wondrich's *Imbibe!* also includes an excellent rundown, and I highly recommend it if you're looking for something a bit more contemporary.

Congratulations! You should now be ready to take on what the rest of this book throws at you. But if you do find yourself feeling lost or confused at any point, you can always turn to the glossary or the appendix for further clarification.

Glossary, p. 177, Appendix, p. 169

Now, pour yourself a nice cold drink (or top off the one you already have), and enjoy *Distilled Knowledge*!