



Brewing with Extract

Beginning and advanced home brewers will find that brewing with extract is a fun and easy way to make great beer. It's also much quicker than the traditional all-grain manner of brewing. Brewing with malt extracts and steeping grains is a great way to make your own award winning beer at home.

Equipment

You will need:

- Your BrewChatter Recipe Kit
- A stock-pot, at least 8 Gallons
- Propane burner
- Long spoon or paddle (24 inches)
- Hydrometer
- Floating Thermometer
- 10" Measuring cylinder
- One 6 - 7 gallon fermentation vessel (Food Grade plastic bucket with lid, Fermonster or glass carboy)
- Bung and Airlock
- 24" x 24" Bag for Hop and Grain Additions

Part 1- Creating the Wort

When you brew, what you are doing is creating a liquid mixture of fermentable and non-fermentable sugars. Your fermentable sugars will be fermented by the yeast and made into alcohol, while your non-fermentable sugars will stay to add things like body and other flavors.

Now that you understand the goal, let's begin. With extract, you can use either purified R.O. (Reverse Osmosis) water, or just your tap water. Extracts already have all the necessary minerals in them, so your water is not really an issue.

Step 1 - Bringing Your Water to a Boil

We will use an 8 gallon pot type of system for our example, as doing it over the stove is only slightly different. If you want to try a split volume boil on the stove, please read our BrewCranium Blog, The Complete Guide to Extract Brewing, at BrewChatter.com.

As you are bringing your water to a boil, read the directions on your BrewChatter Beer Recipe Kit and take inventory. If there are any steeping grains in it, now is the time to bag them up and throw them in. Your BrewChatter kit always comes with a disposable muslin bag for this purpose.

We will typically add about 7.25 gallons of water to our pot and add the steeping grains right away, as well as our floating thermometer. Keep an eye on the water temperature as you heat up, and pull out your steeping grains at 168 degrees. Do not squeeze the bag to get the most out of the grain. Simply let it drip dry into the kettle as you continue to heat your water to a boil.

DO NOT BOIL YOUR STEEPING GRAINS UNDER ANY CIRCUMSTANCES! THERE IS NEVER ANY REASON FOR THIS!

Once your water is boiling, turn off the heat, and begin to stir in your extract with your long spoon. This is the fun part, and is pretty straight-forward. We always make a whirlpool, and use that to stir everything together. You can't really mess this part up as long as the burner is off.

Once all of your extract bags are cleaned out, and the extract is completely dissolved in the water (make sure you get all of it off of the bottom of your boiling kettle!), turn the heat back on and bring it to a boil! With most extract batches, you will boil for 1 hour (60 minutes).

Right before the boil, you will reach what is called the hot break. This is when all of the proteins in the malt and malt extract begin to break down, but until they do, the wort will try to foam up and boil over the edge of the pot. Make sure to be ready to regulate your heat or have a squirt gun with cold water on hand to punch down the foam until the foam dies back down to a normal boil. This is where you begin your boil countdown from 60 minutes.

At this point you will want to organize all of your hop additions.

Step 2 – Hop Additions

Your bittering hop additions are generally made within the first 15 minutes of boil (i.e. a 60 minute hop addition, 45 minute hop addition, etc) and most of your aroma hop additions come after that, either within the last 5 minutes, Flame Out, in a whirlpool at 180° F, or as a dry hop.

The longer you boil your hops, the more bitter character that you will have in your beer. The less you boil your hops, the more flavors and aromas that you will put into your beer, without the bittering characteristic. Many Hazy style IPAs don't even have a bittering addition, where more classic styles like our Lawn Mower ESB will only have a single bittering addition at the beginning of the boil to balance the residual sugar in the beer.

Follow the hop additions on your chosen recipe. If the recipe says 2 oz @ 60 minutes, think of it as a countdown. That means that you will boil those 2 ounces of hops for the full 60 minutes, not that you will put them in after 60 minutes of boiling.

For all intents and purposes, if your recipe says add a hop at flameout or whirlpool, make the addition however your system is set up. If you can't cool the wort down to 180 F to make a whirlpool addition, then add your whirlpool hops when you turn off the burner and begin cooling.

We use a 24" x 24" Grain Bag for all of our hop additions. For beers with multiple hop additions, we add all of the additions to the same bag. This works almost the same as adding hops directly into the boil, with the added benefit of WAY easier clean up at the end.

Step 3 – Cooling Your Wort to Yeast Pitching Temperature

After your boil, kill the heat and decide on your cooling method. There are plenty of ways to cool your beer. It is definitely better to cool your wort as quickly as possible.

Many newer brewers will carry their fermentor to their bathtub, and let it sit on ice. This is called the ice bath method, and takes the cooling period from 24-30 hours when letting it cool naturally, to about 4 hours, give or take. This method is less risky and inexpensive...just brew in the morning!! If you use your sanitized stir spoon to stir the wort while it's in the ice bath, this can cut as much as 2 hours off of your cooling time.

From these basic methods, you can get a Copper Immersion Wort Chiller, a wort chiller and pre-chiller, plate chillers, counterflow chillers, among many others. These methods range from 1.5 hours to, of course, 5 minutes. We recommend starting with a Copper Immersion as they are moderately cost effective and can grow with you as you expand your home brewery.

We will typically add an Immersion Chiller into the boil kettle during the last 15 minutes of the boil to sterilize it. We figure that if something is living on it that can survive a 15 minute boil, it deserves to be there.

Step 4 - Fermentation

From the cooling step on, you need to ensure that anything, including hands, feet, thermometers, etcetera, that goes into your wort is CLEAN and STERILE!! After the boil and cooling (the Hot Side of the process), we move into fermentation and packaging (the Cold Side of the process). Also, there is likely no reason to put your hands or feet in your cooled wort..

This is where many brewers can pick up infections. Once you are cooled to your fermentation temperature (dependent upon yeast, etc. Usually about 68° F for Ales), you need to rack your nice, cold wort out of the brew kettle and into your primary fermentor.

A fermentation vessel can be a 6.5 gallon plastic bucket, 6.5 gallon glass carboy, 7 Gallon Fermonster, or even a stainless steel conical. It is important to have a slightly oversized vessel, at least 6.5 gallons, so that you can transfer 5.5 gallons of cooled wort into the fermentor. This will ensure that you get 5 full gallons of wort into bottles or kegs when fermentation is finished.

We usually throw the yeast in midway through the transfer, and let the pour aerate the wort as we finish transferring. Aeration is a very important part of yeast health, and a minimum of shaking and swirling the wort in the fermentor is always a great idea. After this initial aeration, be sure not to shake or swirl the vessel again during fermentation or packaging.

While we transfer the wort to the fermentor, we always steal some for our test cylinder, take the temp, and at 60° F put the hydrometer in to measure the Specific Gravity (Original Gravity or OG). This is the first of two readings to determine the alcohol content.

The second reading is taken after fermentation. Quick, easy, and it helps to aerate the yeast as you get it into your primary. As the wort pours into the carboy, it can also be good to rotate the carboy every now and again, creating a whirlpool to aerate even more. Once all the wort has been transferred, apply your freshly clean and sterilized one-way air valve with bung in the bung-hole, and you're ready to let it ferment!

Now that you're ready to ferment, you have options! Now, temperature control during fermentation is paramount, but it is also rough for beginning brewers, so we'll put down a few different methods of keeping your wort cool during fermentation.

First things first! Get the fermometers with the adhesive backs! These are fantastic! I actually just re-use them, putting a swatch of see-through moving tape over them to tape them to whatever surface instead of the adhesive, but they're inexpensive. I put mine right in the middle of the bucket or carboy to give me an idea of where the temperature is at.

Also, keep your fermentation device out of sunlight, and maybe in a corner of the house where the smell won't affect anyone. Make sure you have a floor under it that is easily cleaned, or something under it like a plant pan or empty plastic box, because fermenting beer can make quite a mess!

Ok, so your wort will heat up naturally during the process of fermentation due to yeast activity. The goal, in general, is to keep the balance between that heat and where you want your temp. Keep in mind that much of this is dependent upon ambient temperature, i.e. is it in your garage in the middle of a Northern Canadian winter, or outside on the porch facing south during a typical Alabama summer? You will have to tailor your technique to where your fermentation is going to happen. I'm thinking spare room in the closet, spare bathroom, or something along those lines.

One of the easiest ways to keep your wort cool is with wet towels and a fan. Just like it sounds- wet the towels, wrap the fermentation device with them, and train the fan on it! Use towels that aren't the good, expensive bath towels that are your spouse's favorites, though, because if you have a really active fermentation, they will get wet and extremely nasty!!

Another great method is with a temperature controlled fridge or chest freezer. Quite a bit more pricey, but once you get the wort in there and the temp gauge against or inside the fermentation vessel, simply set the temp to 68 degrees, or whatever your fermentation temperature is, and you're solid gold!! The Inkbird Dual Stage Temperature Controller is an inexpensive, easy to use device, and can be set to keep your fermentation within +/- 1 degree of the set temperature.

Heating your beer can be done with small space heaters pointed at the ferm device, or heating belts (Fermwrap belts). I have used a set up with a small space heater inside a temp controlled fridge to great affect and control.

From here, for ales wait 14 full days, and for most lager strains, wait 28 full days. Put your fermentation device into a fridge, if you can, to get the temp to the high 30's or low 40's for a day or two. This is called a Crash Chill, and will force the yeast out of suspension and onto the bottom, making it easier to transfer the clean wort off of the top. From here, you are on to bottling and kegging!!

Please see our Bottling and Kegging Guides for more information on the packaging process! We also have fantastic articles on BrewCranium that outline the complete Bottling process (The Complete Guide to Bottling Any Fermentation) and Kegging (Kegging Your Homebrew – The Complete Guide) processes.