

**BREW  
IT YOURSELF  
HOME BREW KIT**

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**INSTRUCTIONS**

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**BREWING WITH EXTRACT • FERMENTATION  
BOTTLING**



# WELCOME TO THE WORLD OF MAKING HOME-BREWED BEER!

Everything you need to know to turn water, malt, hops, and yeast into a delicious beer to enjoy and share with friends and family is in this box. We'll start with a brief description of the ingredients you will be using, followed by detailed instructions for brewing beer with malt extract. These instructions come from decades of home brewing expertise, as well as published sources such as Charlie Papazian's *The Joy of Homebrewing* and John Palmer's *How to Brew*. If you are looking for more technical or detailed information, we recommend both of these books, or simply stopping in and talking to us at Home Brew Mart. We also offer monthly Beginner and Advanced Home Brew classes. We're open seven days a week, and are always happy to answer your questions.

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## HOME BREW MART

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Hours:  
Mon-Thurs 10:00am – 10:00pm  
Fri & Sat 9:00am – 10:00pm  
Sunday 9:00am – 9:00pm

## **THIS KIT INCLUDES:**

3 gallon, plastic conical fermentor with spigot

3/8 inch bottle filler with tubing attached

Double wing capper

144 – bottle caps

4 oz bottle Io-Star Sanitizing Solution

3 piece airlock

Rubber stopper

Carbonation tablets

Ingredients:

3 lbs light dried malt extract

2 oz Centennial hop pellets

1 pkg Safale US-05 American Ale Yeast

## **YOU WILL NEED:**

3 gallons of water (1 gallon should  
be sanitized and pre-chilled)

Stock pot large enough to boil 2 gallons (12 qt or larger)

1/2 cup table sugar

Thermometer

Timer

Tub or sink

Ice

Spoon

Bottles (approx. 26 x 12oz, 20 x 16oz, or 14 x 22oz)

# THE FOUR BASIC BEER INGREDIENTS

## 1 WATER

Like practically everything on the planet, beer is mostly water, so it's an important ingredient. Since you're brewing with extract, don't stress about water just yet. Here are some quick tips anyway:

*Tip 1:* The best water for brewing beer is free of chemicals and contains minerals which aid in fermentation (distilled water or water purified by reverse osmosis (RO) can be used as well, but mineral water is ideal). You can purchase mineral water in 5 gallon jugs, but in San Diego, water straight out of the tap is fine for brewing. If it tastes good as plain water, it'll taste good as beer. That being said, a carbon filter (Brita or similar brands) is recommended for removing chloramine and will leave those awesome minerals for your yeast.

## 2 MALT

Barley is what gives beer color, body and sweetness. It provides fermentable sugar for yeast as well as vitamins and nutrients for healthy fermentation, which is what makes beer alcoholic. But before it's ready to be turned into beer, barley seed goes through several stages:



it's "malted" to produce starch inside of the seeds, "milled" to expose that starch, and finally "mashed" to convert that starch into fermentable sugars.

Fortunately, with extract brewing, these have all been done for us. The bag of dried malt extract provided in your recipe will be your malt addition. It is what will control the sweetness, color, and alcoholic content of your beer.

## THE FOUR INGREDIENTS CONTINUED...

### 3 HOPS

As early as the 8th and 9th centuries, hops have been used to bring two things to beer: bitterness (perceived by taste) and hoppiness (perceived by aroma). We add bittering hops during the boil in order to balance out the sweet flavors of the malt. The bitterness in hops is due to alpha acids which can only be absorbed in liquid if they are boiled. The longer an amount of hops is boiled, the more alpha acids are absorbed the more bitter the beer becomes. Aroma hops are added late in the boil or after the boil to give beer earthy, piney, or citrusy qualities.



### 4 YEAST

This microorganism will eat the sugar dissolved in your wort (unfermented beer, pronounced "wert") and produce alcohol, carbon dioxide and flavor compounds. Most of a beer's final flavor will depend on the type and overall health of the yeast.

#### YEAST CYCLE

##### Respiration

*First 4–8 hours*

Yeast utilizes oxygen for reproduction and cell construction in preparation for fermentation. During this stage sugar is converted to carbon dioxide; little alcohol is created.

##### Fermentation

*3–7 days*

Yeast in suspension reaches optimum population and converts all fermentable sugar into carbon dioxide and alcohol; depending on the yeast, flavor compounds unique to the strain may be produced.

##### Sedimentation

*After fermentation*

Yeast flocculates (clumps together) and settles to the bottom of the fermentor. We recommend bottling your beer within a month of pitching your yeast. Too long on dormant yeast and your beer may absorb off flavors from yeast cells dying.

## TIPS FOR SUCCESSFUL FERMENTATION

### TEMPERATURE

Keeping a steady temperature in the ideal range for each yeast strain is vital to prevent off-flavors (butterscotch, green apple, sulfur, or even rotten eggs). Too low or high a temperature will cause the yeast to go dormant or die outright. **In this recipe, you should maintain a target fermentation temperature of 68–73°F.** This is the ideal temperature range, but don't worry about ruining the beer if it ferments a little warm. Temperatures under 80°F will still produce a quaffable beer, and even mid 80s can still be drinkable. The point is: don't give up on your beer until you've tasted it in your glass.

### SANITATION

Yeast strains work quickly to prevent wild bacteria or other yeasts from gaining a foothold and ruining your beer, but you can help prevent contamination by ensuring all your equipment is free from microorganisms before they come into contact with your wort.

### OXYGEN

Oxygenating your wort is important for a healthy start to fermentation. Remember, the happier your yeast, the better your beer will taste.

## LET'S GET STARTED!

## DIRECTIONS FOR THIS BREW

The following instructions are for brewing a 2.5 gallon batch of beer using malt extract.

### EQUIPMENT

Large Stock Pot for boil, at least 12qts (3gal)  
3 gal conical fermentor  
I<sup>o</sup>-Star sanitizer  
Airlock and stopper  
Thermometer  
Timer  
Large tub and bag of ice

### INGREDIENTS

3 gallons of water  
*Note:* Water added before the boil can be straight from the tap. Water added after the boil should be sanitary (from a store-bought jug, or boiled ahead of time).  
Malt Extract  
1/2 cup table sugar  
Hops  
Yeast

### PREP

1. Measure out 2 gal of water into your pot. You'll need another gallon of cold and sanitized water during "The Cool Down." This is easily accomplished by picking up a gallon of cold water from a grocery store. You can use tap water, but you'll want to boil it ahead of time to be sure it's sanitized and leave it in the fridge long enough for it to become cold.

## THE BOIL

1. Bring your 2 gallons of water to a stable, rolling boil and add 1 oz of Centennial hops slowly to the water. Keep your hand on the temperature control and be ready to turn the heat off if the hops foam up too much. Start your timer for 30 minutes.

**PRO TIP:** While your beer is boiling you will have some downtime, which is best spent ensuring you're prepared for the rest of your brew day. Sanitize any equipment that will come into contact with your unfermented beer (wort) after the boil. See "Sanitation" for more detailed instructions. Remember, it is good luck to toast the new brew with a bottle of your favorite Ballast Point beer!

2. After boiling your water and hops for 15 minutes, turn the flame off to pause the boil (and your timer), then add your malt extract and table sugar. Be sure to pour slowly and stir constantly. Dried extract will clump on the surface of the water and the table sugar will sink to the bottom. Stir until all sugar at the bottom of the pot and all clumps have dissolved.
3. Once dissolved, recommence the boil and your timer. If you're using a stove top or other low output burner, you can speed up your boil by putting a lid on your pot. However, remember to remove the lid once you achieve a boil to let off-flavors evaporate.
4. Once you add your extract, your wort becomes much denser, and as it approaches a boil it will foam...a lot. After a few minutes boiling, the liquid will reach the "hot-break" and the foam will sink back into the wort on its own. But for those few terrifying minutes, boil-overs can happen to you if you're not paying close attention.

## DIRECTIONS CONTINUED...

### PROPER BOIL



✓ GOOD



✗ BAD

*To avoid a mess, turn the heat down or off.* You may not need to have your burner on maximum output to maintain a rolling boil. As your wort nears 212F, keep a hand on your burner control and be ready to turn it down.

*Have a spray bottle in your other hand.* Continuous spraying of cool water will keep foam at bay until you achieve the heat-break. If you find yourself spraying for more than a few minutes, your heat is probably too high: turn it down.

5. When the 30 minute timer goes off, turn off the heat to the pot and add any aroma hop additions.

### SANITATION

Up to this point we haven't had to worry about microbes, because we have been subjecting our ingredients to boiling liquid, which

bacteria simply cannot abide. But once the boil is done, our beer is susceptible to infection. Like brewer's yeast, wild bacteria strains will eat the sugar in our wort, but instead of alcohol they can create pungent off-flavors like vinegar, sulfur, and rotten eggs. Therefore, anything that comes into contact with our unfermented wort from this stage on must be free of microorganisms.

***Sanitizing Solution:***

1. Add 0.5 oz (1 capful) of Iodine Star to your fermentor and fill with 2.5 gal of water. Screw on the lid to your fermentor and put the airlock and stopper in place. Shake the fermentor gently to sanitize your lid and run some sanitizer through the spigot (this is also the time to check your spigot for leaks).
2. After about 1 minute contact time with your sanitizer, your fermentor will be free of bacteria and can be emptied. You don't need to rinse.
3. You don't want to waste all that good sanitizer, though. Empty your fermentor into a tub or sink in which you can then sanitize the rest of your equipment that will be coming into contact with your beer after the boil:
  - Airlock
  - Stopper
  - Thermometer
4. Once sanitized, use your lid, airlock, and stopper to cover your fermentor until it's ready to be filled.

## DIRECTIONS CONTINUED...

### THE COOLDOWN

The easiest way to cool down your beer is with an ice bath. While your boil is finishing up, you can fill a plastic or metal tub with cold water and ice. If you don't have one handy, a sink or bathtub will suffice.

1. Once the boil is finished, submerge the pot up to the level of hot wort in the ice water.
2. You'll want to swirl the pot around in the water, exposing as much of the hot liquid inside to the sides of the pot. This will speed up the cool down process, but be careful not to slosh your wort out of the pot.
3. If you don't have ice, you can cool the wort just using cold water from the tap. Just replace the water when it gets hot with more cold water.

*Note:* Using ice is more effective if you wait until the wort has cooled significantly first. Getting from boiling to 150F goes pretty fast with just cold water, but getting from 150F to 90F can take awhile without ice. So, don't waste your ice on the easy part.

4. Use your sanitized thermometer to monitor the temperature of the wort as it cools. Once it's down to 90F, you can remove it from the ice bath. We'll be adding more cold water to top up your wort to 2.5 gallons, and that will bring us the rest of the way down to 70-75F. If your "topping-up" water isn't completely cold, you'll want to cool the wort further (i.e. down to 80F or less) in the ice bath before transferring into the fermentor.
5. It's time to rigorously pour the wort into your fermentor. Now

that it's cooled down, it is important to absorb some oxygen into your wort to promote yeast cell growth. Splashing and foaming will help to facilitate this kind of oxygenation. Just be sure not to pour so rigorously that you spill or expose your wort to anything but the inside of the fermentor.

6. Top the wort up to the 2.5 gal mark with the cold, sanitized water we set aside in the prep. Once done, our beer should be close enough to fermentation temperatures to pitch our yeast.

## **THE PITCH**

1. Submerge a pair of scissors and your packet of yeast in your sanitizer to remove surface microbes. Cut open and pour your packet of yeast into your fermentor.
2. Retrieve your sanitized airlock. Fill the airlock to the recommended fill line with sanitizing solution and seal the fermentor. This airlock will allow carbon dioxide to escape without allowing oxygen or bacteria—both of which are undesirable after this stage—into your fermentor.
3. Cover your fermentor to prevent light exposure and stash in a cool dark place. If the yeast is awake and healthy, you should witness bubbling activity in your airlock within 24 hours.
4. Over 2–3 days you should notice the bubbling in your airlock peak, then begin to slow.
5. After 5–7 days the bubbles will have slowed to less than 1 per minute or stopped altogether, yet fermentation may still be occurring.

## DIRECTIONS CONTINUED...

- When 10–14 days after your pitch have passed, and you witness no activity in your airlock, no bubbles popping in your sediment and your beer is relatively clear, it is safe to bottle.

### BOTTLING

When fermentation is finished, your beer will not be carbonated. In order to bring bubbles to our beverage, we use “bottle-conditioning”. This is the process of using priming sugar to reawaken the dormant yeast in the beer, and then sealing the beer in a bottle. The reanimated yeast eat the sugar and create carbon-dioxide, and since it is a sealed container, the gas will dissolve into the liquid, creating carbonation. The priming sugar we use will be carefully measured to achieve the appropriate level of carbonation. Too little and the beer will taste flat, too much and the yeast will continue to create more carbon dioxide than we intended, which can cause over-carbonation or even exploding bottles.

#### BOTTLING EQUIPMENT

Tubing  
I<sub>o</sub>-Star Sanitizer  
Bottle filler  
Bottle capper  
Bottle caps  
Bottles (approx. 26 x 12oz, 20 x 16oz, or 14 x 22oz)

#### INGREDIENTS

Carbonation tablets  
Finished beer

Prep:

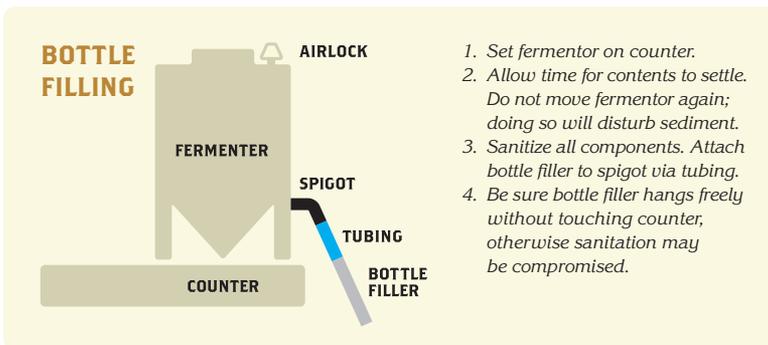
Prepare a sanitizing solution of 1 capful of I<sub>o</sub>-Star in 2.5 gallons of

water to use to sanitize all equipment and bottles in a tub or sink. Don't forget to sanitize the spigot attached to your fermentor. You can accomplish this by filling a glass with sanitizer solution and submerging the spigot into it for a minute or so.

7. Set the fermentor on a counter and allow time for contents to settle. Once on the counter, don't move the fermentor again as that will disturb the sediment.

Now it's time to fill your bottles (*see diagram*).

- a. Connect your sanitized bottle filler to the spigot on your fermentor.
- b. Open the valve on the spigot and use a sanitized glass or bowl to bleed the first few ounces (which may be full of sediment) out of the line. Once clear, use your bottle filler to fill a sanitized bottle to the top with beer.
- c. There is no need to rinse the bottles; 0.5oz/2.5gal Io-Star solution is a non-rinse sanitizer. You can empty the bottle of this solution and fill it immediately with beer.
- d. Add 4 carbonation tablets to each 12 oz bottle (5 for 16oz bottles, 7 for 22oz bottles).
- e. Use your double winged bottle capper to crimp a sanitized cap onto the mouth of the bottle.
- f. Repeat until your fermentor is empty.



## DIRECTIONS CONTINUED...

8. Record your bottling date and set your beer aside for 10 days at room temperature.

*Do not leave in direct sunlight.*

*Do not refrigerate.*

After 10 days, pop one in the fridge and taste it once it's cold. If the carbonation level is good, the rest should be good to drink. If not, wait another couple days and try again.

*Remember to drink your beer out of a glass, not out of the bottle.* Since you are carbonating your beer via bottle conditioning, there will be a thin layer of dormant yeast on the bottom of each of your bottles (think back to what the bottom of your fermentor looked like when fermentation was complete). Luckily for you, when glass bottles were invented, they were given a shape that allows you to decant your beer into a glass and leave behind the hazy, bitter layer of sediment in the bottle.

9. Enjoy the beer you brewed yourself.

## CHEERS TO GOOD, COLD BEER!



# BREW IT YOURSELF

## QUICK GUIDE BREWING INSTRUCTIONS

### PREP

*Measure out all ingredients:*

1. 2 gallons of water in your boil kettle
2. 1 gallon of cold, sanitized water in the fridge (either bottled or boiled ahead of time.)
3. "30 min" and "Flame Out" hop additions

### BOIL

1. Start heating the water in your boil kettle.
2. Once you achieve a stable, rolling boil, slowly add your 30 min hop addition (watch for boil-over) and start your timer for 30 minutes. While boiling, sanitize any equipment that will come into contact with your wort after the boil:
  - a. Measure 2.5 gallons of water into your fermentor and pour in 0.5 oz (one capful) of Iö-Star. Allow to sit for 1 min.
  - b. Dump sanitizer into spare bucket or sink and use to sanitize rest of equipment: fermentor lid, airlock, stopper, thermometer.
3. With 15 min. left until the end of your boil, turn the flame off to pause the boil (and your timer), then add your malt extract and table sugar. Be sure to pour slowly and stir constantly to ensure all extract and sugar dissolve completely. Once fully dissolved, resume boil (and timer). Have countermeasures for boil-over ready, remember that boil-overs become more likely after you've added the extract.
  - a. Be prepared to turn the heat down or off.
  - b. Have a spray bottle of water ready to help keep foam at bay.
4. At 0 min. turn off the heat and add your "Flame Out" addition.

#### **30 MIN**

*1.0 oz Centennial  
(bittering addition)*

#### **15 MIN**

*Pause boil, add table  
sugar, -3 lbs DME*

#### **0 MIN FLAME-OUT**

*1.0 oz Centennial  
(aroma addition)*

### COOLDOWN

1. Transfer the hot kettle from the burner to a sink or tub filled with cold water.
2. Swirl it to better cool the wort inside.
3. Refill the ice bath with cool water as it warms up, or add ice to keep it cold longer. Using ice is more effective if you wait to add it until the wort has cooled significantly. Refilling your tub with cool water should be sufficient to bring your temperatures from boiling to 150F without the ice. Getting from 150F to 90F goes a lot faster if you add the ice at this point.
4. Once your wort has cooled to 90F, rigorously pour it into your sanitized fermentor. Top off your fermentor to 2.5 gal with the cold gallon of water from the prep.

*From here on,  
everything that  
comes into contact  
with the wort  
must be sanitized.*

### PITCH

1. Add your yeast to your fermentor.
2. Fill your airlock to the recommended line with sanitizing solution and fix in place with your rubber stopper.
3. Store in a cool dark place. You should see bubbling in your airlock within 24 hours.