



Midwest Homebrewing Supply

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Amarillo Pale Ale

Recipe for 5 Gallons All Grain

SG: 1.052-1.054

FG: 1.011-1.014

1. Inspection and Yeast Evaluation Make sure you have all of the ingredients listed on the side of the box. We can replace missing parts before you brew, we cannot replace kits once you've brewed. If you are brewing with liquid yeast be sure to evaluate their health before brewing, once again we can replace yeast but not beer kits. If you are working with Wyeast strains be sure to allow 1-2 days before brewing to evaluate their viability. If the pack swells then the yeast are happy and you can brew. If it does not swell after 2 days then do not brew and contact us. For White Labs strains, it is recommended to do a starter to evaluate their health, especially if the yeast were shipped during the summer months. A less reliable method would be to shake the vial once it's warmed up, you should notice little CO2 bubbles (a sign of fermentation) once they warm up and start consuming the nutrient available. Yeast damage happens and we try to ship yeast as reliably as possible, but it is up to you as a brewer to determine the viability before brewing.

2. Cleaning and Sanitation Be sure to inspect all equipment for any debris or films, you can't sanitize a dirty fermenter. PBW or B-Brite both work great for cleaning your equipment. Clean your primary fermenter with a sponge. Don't use any abrasive pad that could scratch the inside of your bucket, these scratches could hold bacteria that could affect future batches. Do not use soap; it can ruin the head of your beer. One step or Star San sanitizers are recommended to ensure a sanitary environment without the need of rinsing. We recommend using a separate container such as a bucket or another pot to soak your smaller equipment during the appropriate stages of brewing, fermenting and bottling. Remember, post-boil, everything that comes into contact with the wort needs to be sterile.

3. The Mash (Single Infusion) If you did not have your **grains** crushed in our store then use a rolling pin or an empty beer bottle to lightly crush the grains. (We will crush grains at no charge upon request) Next, prepare your strike water (1.25 quarts per lb of grain). You will need to heat the water to 10-18 degrees above your target temperature to account for heat loss in the transfer and the grains. In most cases for a well balanced conversion, Midwest recommends a mash temperature of 152° F. Adjust with ice or boiling water accordingly. Next, mix the crushed grains into the mash tun along with the strike water and mix thoroughly as you go (avoid dry pockets). Mash your grains at 152° F for 60 minutes. Check for starch conversion either through taste (it tastes sweet) or through an Iodine test (wort sample does not turn blue with a few drops of iodine).

4. The Sparge Prepare the sparge water at a rate of ½ gallon per pound of grain. Bring the water up to 170 degrees and try not to go much over this as it will leach tannins. Slowly start your collection; quick flow rates could collapse your grain bed. Slowly collect the wort and add back to the mash until the wort is running free of debris (*vorlauf*). Next, with your grain bed set you can begin the sparge. Sparge with either a sparge arm, or use a colander to gently disperse the sparge water over the grains (fly sparging). Try to keep 1-2 inches of water above the grain bed. Slowly collect the sweet wort; 30-90 minutes of sparging is ideal for an increased efficiency in collection.

5. The Boil Once you have collected your volume, bring the wort to a boil. A propane cooker may be needed to bring the full volume of wort to a boil. It is helpful to heat the wort as it is collecting during the sparge, this will take time off of your brew day. As soon as you see a boiling bubble add 1/2 oz **Chinook** bittering hops (half the bag) and boil for 60 minutes for optimal hop utilization. After boiling for 40 minutes add 1 oz **Amarillo** flavor hops. Boil for 20 minutes then add 1 oz **Amarillo** aroma hops and remove the kettle from the heat.

5. Cooling the Wort Make sure you have cooled your wort below 80 degrees. If you want to take a hydrometer reading, do it now. Do not return any samples back to the fermenter. Methods of cooling your wort:

1. You can set your brew kettle (sanitized top on, if available) in a sink full of ice stirring the wort with a sanitized spoon every 15 minutes. With 5 gallons this is not recommended.
2. THE BEST: Use a wort chiller immediately after boiling. The faster you cool the wort and add the yeast, the less chance you'll have of any contamination. The temperature must be below 80 before adding the yeast.

6. Fermentation If you are using dry yeast, you can re-hydrate the yeast in luke-warm water (90-100 degrees), let it stand for 10 minutes and pour into the wort, or you can just sprinkle the dry yeast over the top of the beer. If you are using liquid yeast, follow the directions on the packet. Approximately 1-3 days after adding the yeast you should start to notice a healthy fermentation taking place. A head of foam (called krausen) will have formed and CO₂ should be bubbling out of the airlock. If your fermentation is over active and comes out of the fermenter, clean it up using a towel soaked in sanitizer. After 5-7 days of fermentation, transfer into a glass carboy. If you are using a single stage fermenting system, then leave the beer in the fermenter for two weeks total.

You can be sure that the yeast is done by taking a hydrometer reading three days in a row and getting the same reading, a gradual lowering of the reading will indicate a slower or unfinished fermentation. If your reading finishes high (i.e. The beer tastes too sweet) then check out our FAQ for tips on increasing your attenuation. Be patient. A good rule of thumb is to allow 2 weeks for fermentation and everything will be fine. Dry yeast has been known to ferment very fast while some liquid strains can take longer than expected. Use your hydrometer to tell you where your beer is at, it is your window into what is going on in the fermenter.

7. Bottling At bottling time, heat 1 cup of water and add 3/4c (5oz.) of corn sugar provided in the kit. Bring the solution to a slow boil for five minutes, then cover with a sanitized lid and let cool. Sanitize your bottling bucket, tubing, bottle filler, caps and bottles. You will need to sanitize 48 - 54 twelve oz. bottles, or 24-28 twenty-two oz. bottles. The dishwasher may be used for sanitizing the bottles by using the heat of the dry cycle. Sanitize caps in a sanitation solution. After everything is sanitized, add the corn sugar mix to the bottling bucket, siphon beer from your fermenter into your bottling bucket and fill the bottles using a bottle filler. Cap your bottles and you're done. If you are kegging the beer only use 3oz (1/2c) of priming sugar and store. Store your beer in a cool (60-70 degrees), dark place for 2 to 4 weeks. Not on a cool basement floor in winter. If there is no carbonation, get the beer in a warmer location and swirl each bottle to rouse any settled yeast. ENJOY!!

Call the Midwest Experts With any questions on our advice line!