



Mad City Munich Dunkel

⚠ If your kit has **liquid yeast**, put it in the refrigerator as soon as possible.

Mad City Munich Dunkel is malty, smooth, and has a slightly hoppy bitterness. The German Hallertauer hops will balance the heightened maltiness that the Munich malt lends the beer.

Calculated Approximate: O.G.: 1.050 F.G.: 1.014 ABV: 4.7% IBU: 15 SRM: 17

Please Note: This recipe and these instructions assume a 5 gallon batch size with 70% efficiency for a standard homebrewing setup. You may want to tweak the numbers to fit your brewhouse.

The gravity, IBU, and SRM stats are approximations, so don't worry if you are a few points high or low.

Kit Ingredients

- 5 lb German Munich Dark malt
- 4.25 lb German Munich Light malt
 - ¼ lb Caramel 60L malt
 - ⅓ lb Debittered Black malt
- 2 oz. Hallertauer hops
- 1 cup corn sugar (for bottling)
- Wyeast 2308, WLP830, or GY045 yeast

⚠ Please make sure that your kit contains these items. Please call us at 608-257-0099 before brewing if any item is missing. Thanks!

Directions

Sanitize everything well! Remember to stir periodically throughout the boil!

0. If you are using liquid yeast, about three to six hours before you are going to brew, remove the liquid yeast from the refrigerator. If it is a Wyeast pack, break the nutrient pack inside the yeast package according to the directions on the package. Leave the yeast out at room temperature until it is time to pitch your yeast into your beer.

Lagers are a little trickier to ferment than ales, so we HIGHLY recommend using one of the three following methods to help your yeast ferment your yummy beer:

- a. Make a starter. About 2 days before you are going to brew, mix 3.5 oz of dry malt extract in 1 liter of water, boil for 15 minutes, cool down to below 80F, add your yeast, and let ferment for 24 hours. If you are not using a stir plate, you may want to swirl your starter a few times a day. After 24 hours, put the starter in the fridge and leave it in there until about 3 hours before you brew. When it is time to add your yeast at the end of the brew day, decant the liquid and add the yeast sludge at the bottom of the starter container.
- b. Use multiple yeast packs.
- c. Use a single yeast packet, add your yeast at the end of brewing as you normally would, then allow the beer to ferment for 24 at room temperature. Once you see signs of active fermentation, then lower the fermentation temperature down to around 50F.

1. Fill your kettle with 3.5 gallons of water and heat it to 165F. Pour crushed **grain** into your mash tun and add the water. Check the temperature, make sure it is 154F. If it is too low, add hot water to bring up the temperature. Mash the grains for 60 minutes.
2. While your grains are mashing, heat 4 gallons of water to 170F in a separate pot. After the mash, vorlauf (drain 1-2 liters, or until wort is running clear and return this liquid to the mash tun) and drain the liquid from the grain. Then, sparge (rinse) the grains with the 4.5 gallons of hot water, collecting the runnings in your boil kettle. Then turn on the heat and bring the mixture to a boil. You will be boiling the mixture, called wort, for a total of 60 minutes. However, keep reading, because you'll be adding hops during that time.
3. Upon initial boil the wort may foam up (called a "hot break"). If this happens, reduce the heat until the foam recedes, then turn up the heat, bring back to a boil, and maintain a rolling boil. Start your 60 minute boil timer now. Add **1 oz of Hallertauer** hop pellets and boil the wort for 45 minutes. This hop addition will impart the bitterness to your beer.
4. Time for another hop addition. Add **1 oz Hallertauer** hop pellets and continue to boil for 15 more minutes. After these 15 minutes (60 minutes total), you are done boiling your beer, so turn off the heat.
5. Sanitize fermentor, stopper, and air lock with sanitizing material according to its directions.
6. Cool your hot wort down to around 70-80F by placing your pot carefully into a sink of ice water or by using a wort chiller. Carefully pour the hot wort into the cold water in the fermentor. If necessary, top up to 5 gallons with cold water.
7. Take a temperature reading of the wort. If the wort mixture in the fermentor is below 80°F (not warm to the touch), give the wort a good shake or a good stir with a sanitized metal or plastic spoon. Here you are trying to aerate the wort, which will help your yeast get going. This is also a good time to take a hydrometer reading. The number from this reading is your starting gravity. Add your beer yeast. Instructions are on the yeast package.
8. Seal your fermentor. Attach fermentation lock half filled with water. Ferment at 48°-55°F for ~21-28 days. Note that it can take up to 48 hours for active fermentation to be visible. If you don't see activity in the air lock or foam on surface of beer after 48 hours, call us at 608-257-0099. If doing a double stage fermentation, siphon beer into glass carboy after around 14 days in primary fermentor (the beer may be transferred to the glass carboy as soon as foam has fallen far enough so the carboy will not overflow).
9. After 21-28 days, if your beer has ceased fermentation or is almost done, raise the temperature of the beer to 60F-65F. This is called a diacetyl rest. Let the beer sit at this temperature for 24-48 hours. Once the diacetyl rest is complete and there is no activity in the fermentor, lower the temperature of the beer to refrigeration temperatures (34F-40F). This is the lagering phase. Let the beer sit for 2-6 weeks. Now you can go ahead and bottle or keg your beer. Whether you bottle or keg, sanitize everything that will contact the beer during packaging, including bottles, caps, kegs, siphon tubing, bottle filler, etc. Also, now is a good time to take a hydrometer reading. This would be your beer's final gravity.
 - a. **Bottling, Single-Stage Fermentor:** Siphon beer into sanitized bottles. Pour just under 1 tsp. corn sugar in each bottle. Cap and turn bottles upside down several times to mix in sugar.
 - b. **Bottling, 2-Stage Fermentor:** Rack the beer carefully off the sediment into a sterilized fermentor or bottling bucket from the carboy. Bring $\frac{3}{4}$ pint of water to a boil. Turn off heat. Dissolve 1 cup of corn sugar in this hot water and stir gently into the beer. Bottle and cap.
 - c. **Kegging:** Siphon beer into a sanitized keg, purge oxygen from head-space, hook up to your CO2.
10. Store upright at room temperature (~70F) for 14 days to carbonate. Beer may then be stored at cooler temperatures to age. Beer may be consumed at any time, though it will continue to improve over time.