



HOPZOIL[®]

SOP: Hopzoil Dosing Procedure in Beer and Other Beverages

SOP: CII-30-01 REV:0



HOPZOIL MAJIK



HOPZOIL HAZY

Prepare the beverage as you normally would. Begin Step 1 (below) prior to adding your beverage to the Finishing Tank.

1. Preparation of dosing solution

- A) Pull 100-500ml of the prepared beverage into a sanitized beaker.
- B) Take the already-emulsified version of Hopzoil (MAJIK or HAZY), measure and pour the desired amount into the 100 – 500ml beverage sample.
 - i) It may or may not mix at first. You may mix if desired. Make sure to use sanitized utensils if you mix.

2. Adding the dosing solution to Finishing Tank (Brite, Carbonating, Mixing or whatever tank you use)

- A) Start transferring your prepared beverage to your finishing tank.
- B) Aseptically add the dosing solution (containing Hopzoil) to the tank from an accessible port that will allow you to pour the solution into the tank.
 - i) NOTE: In the PURE Section, step 2: it shows other options to add your dosing solution to tank. Either way will work.*
- C) As you complete the beverage transfer, the Hopzoil will naturally blend with the beverage and you will get a homogenous mixture.

3. Carbonation

- A) If your beverage calls for it, carbonate as you normally would.
 - i) With the Hopzoil mixture already added to the tank, this step will help to ensure a fully blended beverage.

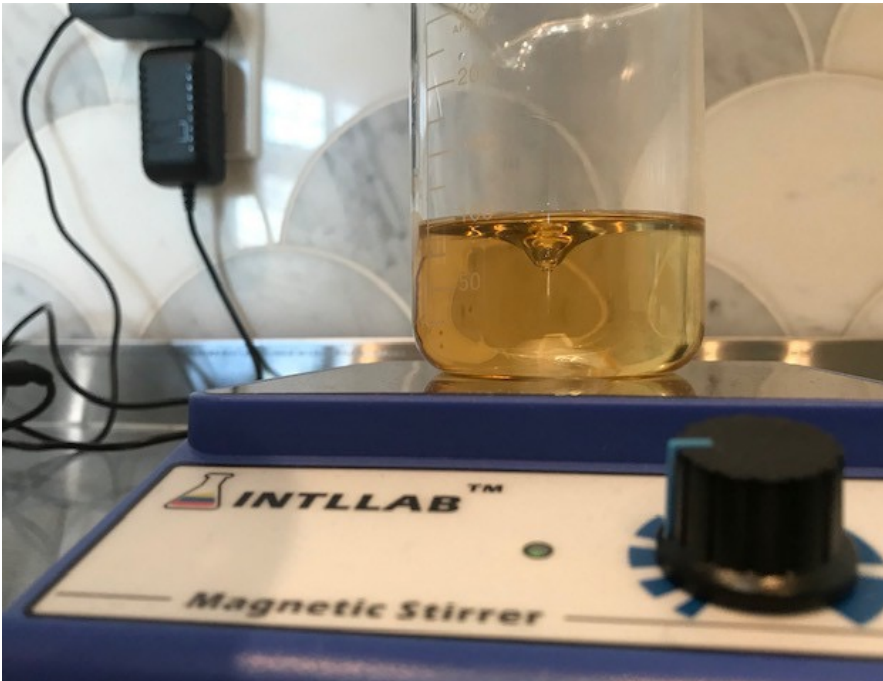
4. Bloom

- A) Wait 12 to 24 hours for the Hopzoil to release its aromatics and “BLOOM”
- B) Once the beverage has bloomed it is ready to be served
 - i) NOTE: MAJIK and HAZY results are best when added to the cold conditions of a brite tank. 33-38°F*



1. Creating the Water-Soluble Solution – Blending the Hopzoil and Ethanol

- A) It is necessary to first dilute Hopzoil PURE with 95% ABV Ethanol. The blending ratios can range from 1:1 to 6:1, Ethanol to oil. Differing varieties may produce differing results, so it is always recommended to test in small quantities first before emulsifying the oil you are going to pitch.
- i) You will need a beaker or flask, a stir plate, and a stir bar.
 - ii) Add stir bar to flask and then add your Hopzoil. Turn on stir plate and rotate the stir bar at a speed fast enough to mix but not to have a vortex.
 - iii) Slowly add ethanol to the mixture. The result will be hazy - this is normal.
 - a) For best results, once all ethanol has been added, let it mix for 12 hours.
 - If it is not emulsified correctly the product will cause insoluble resinous aggregates to form which may impair the application of the product.



2. Dosage procedure – three options

- A) Option 1 - Add the dosing solution (emulsified Hopzoil) to the tank from an accessible port that will allow you to pour the solution into the tank, as is discussed in step 2 of the MAJIK/HAZY SOP.
- B) Option 2 - Inline Transfer into a full tank not carbonated.
 - i) Create a dosing chamber
 - a) The dosing chamber is composed of a butterfly valve coupled to the finishing tank (A), a 90° elbow (B), and another butterfly valve (C).



- ii) Open valve C and add dosing solution to the elbow, then close valve C. {Figure E



- iii) Create a positive pressure in dosing chamber.
 - a) It is important to control the pressure of the tank. It may be necessary to de pressurize the finishing tank before dosing, thus facilitating the ease of entry of the dosing solution.
 - b) Connect CO2 hose (D) to valve C and slowly open CO2. Let it fill valve C for a few seconds

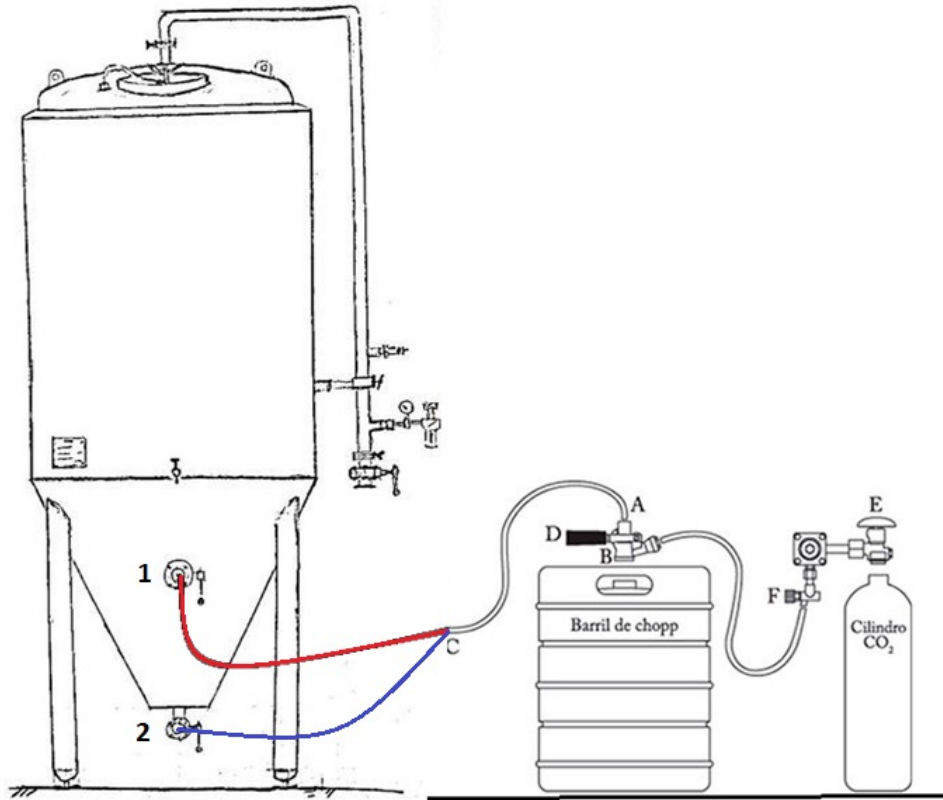


- c) Slowly open valve C, this will bring pressure to the elbow.
- d) Slow open valve A. This will inject the dosing solution into the tank.
 - If you are carbonating the tank, then skip to the next step (e). If you are not carbonating the tank, you will need to get a homogenous mix of the dosing solution in your tank. Keep the CO2 on for another 20 min. This will force the tank to agitate, thereby mixing the dosing solution.
- e) Once you feel solution has been injected, close valve A and turn off CO2.
- f) Remove CO2 from valve C and slowly open valve 2 to release the pressure in the elbow.
- g) Remove elbow from valve A, keeping it closed. Proceed to clean and sanitize your elbow and valve C.
- h) Proceed to Carbonate as normal.

C) Option 3 - Keg Inline Transfer

- i) Remove the internal pressure from the Keg, disassemble the cathode tube. Place the Hopzoil emulsified solution inside the Keg. Close the Keg and connect the Keg to the tank, to fill and blend.
- ii) Let the beer flow into the Keg until full. (Check that the extraction valve has no reflux system, which may not let the beer enter the barrel).
- iii) First, shake/agitate the Keg that has been filled with both the Hopzoil emulsification and beer, and then with CO2 pressure, inject the entire contents of the Keg into the beer tank.





- iv) Once the Keg is empty if you need to carbonate the beverage, close all valves and shut off CO₂. Then proceed to carbonate as usual.
 - a) If you are not carbonating, leave the CO₂ open and connected to the tank for another 20 minutes. Make sure there is bubble formation and that the internal liquid is moving for 20 minutes.
- v) NOTE: Some brewers using a fermentation tank to bright tank system have migrated to this dosing method, rather than the inline dosing method, with good success.

3. Final Notes:

- A) Using Best Practices in Dosing Procedures
 - i) In this SOP, we outline a few of the dosing procedure options, however, we note that there may be other methods that suit your equipment/tools better. Feel free to consult our Commercial / Technical team to better adapt to your needs.
 - ii) Carbonation should be sufficient to create turbulence and ensure complete homogenization of Hopzoil into the tank.
- B) Cleaning:
 - i) We have found that an inexpensive all-purpose degreaser, particularly Las TOTALLY AWESOME ORANGE All-Purpose Degreaser & Spot Remover (found in the U.S. at Dollar Stores), works well.
- C) For additional technical support, contact us at 406-862-4677 or todd@glacierhopsranch.com

