



HUMUFLOR

HOP ESSENCE

Humuflor is an innovative 100% water-based natural hop aroma product. Easy to use, and effective. It's available in 5 varieties.

AT-A-GLANCE

- **Efficient:** One ounce of Humuflor is equivalent to one pound of pelletized dry hops.
- **Time Saver:** A mere 24 hour tank residency time for dry hop aroma development vs. 5-7 days when doing static dry hopping through a dry hopping port with pellets.
- **Reduce losses:** 10 gallons of hop loss absorption can be equated to every pound of hops used. Thus: for each ounce of Humuflor used a 10 gallon greater yield will be the result as compared to using pelletized hops.
- **Safety:** Easier and safer to use, there's no need to climb a ladder while carrying a box or bucket of hops. The product can be easily and safely dosed into the fermenter, bright tank, or directly to the keg.
- **Quality Outcome:** No O₂ introduction or potential cross contamination when adding as compared to opening up a tanks dry hopping port.
- **Great for Innovation:** Easy to create an entirely new beer from an existing brand by merely incorporating Humuflor.

BENEFITS OF HUMUFLOR VS HOP PELLETS

	HOP PELLET	HOP ESSENCE
Cost	Use LESS essence than hops	
Water Base	Aroma compounds in water-based liquid	
Process & Cleaning Time	+ hours	minimal
Beer Losses	~10%	none

HUMUFLOR PRICE LIST

CONTAINER SIZE	PRICE(USD\$)	DISCOUNT
5-pack 8oz/237 ml	\$120	—
1 gal/3.8 L	\$375	2.0%
5 gal/18.9 L	\$1,825	5.0%

* at a ratio of 2oz for every 1lb of hops

INDEPENDENT ANALYSIS

Oregon State University aroma compound analysis of Humuflor hop essence:

COMPOUND CLASS	AROMA COMPOUND	CONCENTRATION (mg of compound / L of solution)	ASSOCIATED ATTRIBUTES
Terpene	MYRCENE	99.9	Resinous, Carrots
Terpene	LIMONENE	1.0	Lemon, Citrus
Sesquiterpene	BETA-CARYOPHYLLENE	51.7	Woody
Sesquiterpene	CARYOPHYLLEN OXIDE	1.0	Herbal, Hay
Terpene alcohol	LINALOOL	39.9	Fruity Pebbles
Terpene alcohol	GERANIOL	30.9	Rose, Floral
Terpene ester	GERANYL ACETATE	1.4	Gardenia, Floral

Study executed with our Cascade hops

HOW TO USE HOP ESSENCE

What hop varieties has it been used with?

Several varieties have been employed alongside Humuflor and based upon brewers' feedback we have found that they all work well. Through brewing trials many brewers have expressed they feel it's better to stay away from spicy, floral, and the otherwise more neutral aroma hops when using pellets or whole hops in conjunction with Humuflor.

What usage rates work best?

Brewers have had amazing results by using pellets at a 1 pound per barrel rate in conjunction with 1 oz. of Humuflor per barrel in hop-forward pale ales. When using Humuflor as a stand-alone aroma addition, we recommend that brewers double the rates above.

- 2 oz. per bbl. as a standard aroma addition
- 4 oz. for IPA and DIPA
- 6 oz. for triple IPA

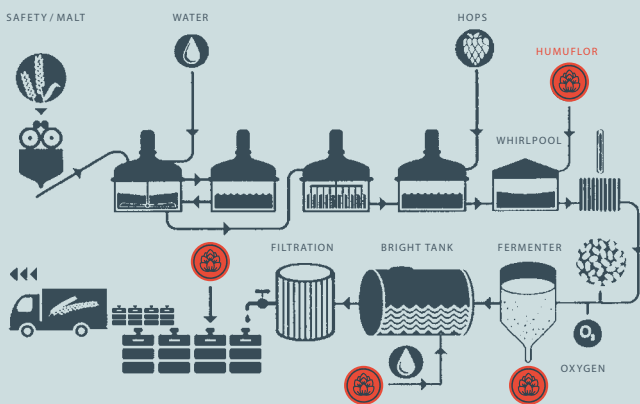
What beer styles does it work well with?

Humuflor works well in virtually any beer style where hop-forward aromatics are desired. Heavily dry-hopped American Pale Ales and IPAs are ideally suited for Humuflor usage.

Where do you apply it? (see diagram)

Humuflor can be applied anywhere post-boil in the whirlpool kettle, fermentation vessel, bright tank, or it could be added directly to the keg prior to filling. However, we recommend application in the bright beer tank.

Dosing with Humuflor is easy.



Simply shake and measure out the correct quantity at the whirlpool, fermenter, or bright tank stages of the brewing process. Humuflor is concentrated so no pre-mixing or dissolving is required.

Do you need to deaerate the vessel used for adding the product to the bright tank?

Before dosing Humuflor to a bright tank, it's always recommended that brewers deaerate the product. This can be done using a small 2-gallon soda keg. The first step is to measure the amount of Humuflor needed for the batch size. Then clean and sanitize the keg and add the Humuflor to the keg that has been purged of oxygen. Then slowly bubble in CO₂

through the out port down through the pickup tube, this will purge all of the oxygen from the Humuflor. The oxygen can be released from the vessel by depressing the gas pressure relief valve and allowing the blanketed oxygen to be purged out. At this point the Humuflor is ready to be dosed.

How do I transfer it to the vessels?

When adding humuflor to a bright tank, simply increase the pressure of the keg to greater than the tank's pressure. Then connect the outlet of the keg to the sample valve, and this will push the Humuflor through the line into the tank. The product could of course be poured directly into the keg, which would then get purged of any oxygen prior. Humuflor could also be added to the fermentation tank through the dry hopping port of the tank, but it is preferred that it be dosed in a closed environment.

How do I mix it into the beer?

Humuflor just needs to be made homogenous into the beer. This can be done simply with a sanitized centrifugal transfer pump and two short hoses. After the sanitization process is complete, the hose connected to the pump outlet gets hooked to the racking arm, which will be pointed in the up position. The pump inlet hose will be connected to the drain valve on the bottom of the cone. Running the variable frequency drive on the pump at 20 ohms is a perfect speed for looping and getting the Humuflor homogenous. The sanitizer must be purged out of the lines prior to connecting the lines and starting the recirculation.

How long does it take to work?

After looping, the beer can be cold crashed and then it can be transferred or carbonated depending on where the Humuflor was added.

How much time can I save using it?

The use of humuflor in lieu of staggered dry hopping shortened tank residency time by one full week. There is also significant time saved during the CIP process not having to deal with the clearing of hop material that has settled in the cone of the tank post-transfer. Humuflor usage mitigates the water used to rinse this hop material from the tank as well.

How do I store it?

If storing for more than 6 months, it's best to keep it frozen, otherwise simply keep it refrigerated at all times.

How long can I store Humuflor?

Humuflor can be stored frozen for up to a year. Once the product has been opened, it's best to use it all or purge any oxygen remaining in the container prior to storing.

For more information, please contact us at:
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