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Approved By:	Philip Woodnutt

Technical Data Sheet

Hop Unlock Liquid Yeast

Product Description

Hop Unlock Liquid Yeast is developed and manufactured by WHC Lab.

Introducing our innovative thiol-releasing yeast, a game-changer for brewers seeking to enhance and elevate the aromatic profile of their beers. Hop Unlock has been carefully selected to release desirable thiols during fermentation, resulting in pronounced tropical and fruity flavors that are highly sought after in modern beer styles.

A variety of methods can be used to increase the amount of bound thiols in the wort production process:
1. Mash Hopping- Mash hopping with hop varieties such as cascade or calypso at a rate of 3-4g/L significantly increases the amount of bound thiols in the wort and is highly recommended.
2. Whirlpool additions with hops that have high levels of bound thiols. Apollo, Eureka, Hallertau Hallertauer, Nugget, Hallertau Perle, and Idaho 7 are all hop varieties that have been tested to be high in these levels.
3. Dry Hopping with hops that work well with a strain that has high levels of biotransformation including Mosaic, Citra, Idaho 7 and Nelson Sauvion.
4. Including thiol precursors in the fermenting beer, there are a variety of products on the markets such as Phantasm that increase thiol precursor compounds within the fermenting wort add at dry hop or at high krausen for best results.
5. Different base malts contain a high variance of bound thiols within them, we would suggest asking your maltster/wholesaler if they can get data on the level of precursor in their malt products. If they are unsure on how to test for this you can put them in touch with our laboratory department.

Guidelines

Pitch sizes are for standard gravity wort.
For starting gravity above 1.065 please order double the pouches.
For gravity above 1.080 order triple the amount of yeast.

The intended fermentation temperature range is 17°C to 19°C.

Ingredient Declaration

Yeast [*Saccharomyces cerevisiae*]

Technical Specification

Yeast Strain	*Saccharomyces cerevisiae*
Fermentation Temperature	*17°C to 19°C* *63°F to 66°F*
ABV Tolerance	*12%*
Nitrogen Demand	*Medium*
Attenuation	*73% to 77%*
Flocculation	*High*

Physical and Chemical properties

Parameter	Unit of Measure	Typical Value	Specification Value
Physical State	-	Liquid Suspension *(some settling may occur)*	As for Typical Value
Appearance	-	Beige suspended cells in dark liquid	As for Typical Value
Odor	-	Weak characteristic yeast smell	As for Typical Value
Moisture	%	72 - 74	Max. 75
Total Yeast Plate Count	Cfu/g	1.3×10^{10}	$> 10^{10}$
Direct Live Cell Count	Cells/g	1.9×10^{10}	$> 1.9 \times 10^{10}$
Lactic Acid Bacteria	Cfu/g	< 10	$< 10^{3}$
Acetic Acid Bacteria	Cfu/g	< 10	$< 10^{4}$
Wild Yeasts	Cfu/g	< 10	$< 10^{5}$
Moulds	Cfu/g	< 10	$< 10^{2}$
Coliforms	Cfu/g	< 10	$< 10^{2}$
Escherichia coli	Cfu/g	Absent in 1 g	Absent in 1 g
Staphylococcus aureus	Cfu/g	Absent in 1 g	Absent in 1 g
Salmonella spp	Cfu/g	Absent in 25 g	Absent in 25 g
Listeria monocytogenes	Cfu/g	Absent in 25 g	Absent in 25 g

Allergens*

Hop Unlock Liquid Yeast contains ***gluten*** *(namely Barley).*
**EU Regulation 1169/2011 (Food Information Regulations) (Annex II)*

GMO

Hop Unlock Liquid Yeast does not contain genetically modified organisms or materials.

Packaging

Hop Unlock Liquid Yeast is available in plastic polytainer packs.
This material complies with relevant food-contact legislation, including, EU Regulation 1935/2004 (materials intended for contact with food), EU Regulation 1245/2020 (plastic materials intended for contact with food)), EU Regulation 2023/2006 (GMP for materials intended for contact with food), and FDA CFR 21 (174-179) (USA).

Storage and Handling

Storage Conditions:	For optimal viability, refrigeration (2°C to 4°C) is recommended until day of use. Not suitable for freezing.
Shelf life:	4 months from date of production, if seal is not broken, and if stored as outlined above.
Handling:	It is recommended to use all the fresh yeast once the polytainer seal is opened. Where this is not practical, immediately re-seal the opened polytainers after use, store in refridgerator (2°C to 4°C) and use within 2 to 3 days for maximum activity. Please note best before date prior to opening. ***Please request a Material Safety Data Sheet/MSDS for further advice.***

Beer Styles

Brown Ales, Imperial Stouts, NEIPAs, Pale Ales, Stouts, West Coast IPAs

If you have any questions or concerns about our product please contact us at lab@whclab.com

Prepared by:
The Quality Department at WHC Lab