



# PHA® water-based Classics

## GENERAL

An aqueous emulsion of hop (*Humulus lupulus* L.) extracts containing hop oil fractions, for addition of hop aroma and flavor to beer. Ingredients: water, hop extracts.

PHA® water-based Classics are aroma products that provide a defined aroma characteristic.

## CHARACTERISTICS

PHA® water-based Classics are 100 % soluble in beer (or other beverages). In general, PHA® water-based Classics offer an alternative means of adding hop aroma independent of any other product or process and of annual crop variations. They can complement traditional means of adding hop aroma. Specifically, PHA® water-based Classics can impart beer flavor attributes, for example flavors with citrusy, floral, spicy characteristics. They enhance pleasant existing flavors in the beer/soft drink and can mask some off-flavors. The following PHA® water-based Classics are available:

- PHA® water-based Citrusy
- PHA® water-based Spicy
- PHA® water-based Floral
- PHA® water-based Fruity
- PHA® water-based Herbal
- PHA® water-based Woody

<b>Appearance</b>	Milky, hazy emulsion
<b>Color</b>	Cloudy white
<b>Density</b>	approx. 1 g/mL

Further product specifications: Available on request.

## PRODUCT USE

Shake bottle well before use.

A usage rate is normally about 30 mL/hL but might vary between 5 - 40 mL/hL according to the desired intensity of aroma. Higher dose rates are also possible. We recommend laboratory scale trials to determine which concentration gives the desired effect - see Trial Guide below.

## TRIAL GUIDE

We recommend benchtop trials to determine which concentration gives the desired effect. To get a better initial understanding for the effect of individual PHA® water-based Classics products and the required dose rate, we recommend dosing directly into a glass of beer. Using the pipettes provided, two drops of a PHA® water-based Classics into 200 mL of beer will give a dose rate of approximately 30 mL/hL.

For more accurate results, we suggest following this up with dosing into bottles as explained below. PHA® water-based Classics can be dosed directly using a micropipette or syringe. For example, a 99 µL amount of PHA® water-based Classics added to a 330 ml bottle gives a dose rate equivalent to 30 mL/hL. Chill the beer to normal drinking temperature. Open and introduce the required volume of PHA® water-based Classics into the headspace of the beer bottle and reclose the bottle. Invert the bottle several times to ensure mixing and chill again for at least two hours before opening and tasting.

## SPECIAL PROPERTIES OF PHA® WATER-BASED CLASSICS

The PHA® water-based Classics have the following properties:

- Hop oils derived from hops by physical processes, emulsified with hop extracts
- Fully soluble: utilization is 100 % because of full solubility in beverages.
- No negative impact on beer quality.
- Easy handling: Provided as standardized solution for direct dosing.
- Light stability: free of hop  $\alpha$ -acids; can be used with any packaging type.
- Ideal for brand diversification: differentiate existing products or create new ones.

## PACKAGING

Packaged in glass or in lacquered aluminum bottles.

## STORAGE AND BEST-BY RECOMMENDATION

PHA® water base products are stable in unopened containers for at least 24 months. Store unopened containers cold. Refrigerated storage (approx. 5°C) is recommended for best quality. Once opened, use quickly. Do not freeze.

## LABELLING

PHA® water-based Classics can be labelled according to 1334/2008 as "Hop Extract".

## SAFETY

Please refer to our SDS which can be downloaded on our website.

## TECHNICAL SUPPORT

We will be pleased to offer help and advice on the use of PHA® water-based Classics in brewing/soft drink production.

E-Mail: [Brewingsolutions@barthhaas.de](mailto:Brewingsolutions@barthhaas.de)