

EUPHORICS™

Technical Data Sheet

CHARACTERISTICS:

EUPHORICS™ is an innovative flavor product from John I. Haas, Inc. (HAAS®) that provides a range of water-soluble, intense natural flavors designed from distilled essential oils found in hops and in other botanical sources. This versatile flavor tool can be used to complement the hop aroma in heavily hopped beers or as a building block in any other beer style or beverage.

PRODUCT SPECIFICATIONS

Description:	Water-soluble blend of essential oils derived from hops and other botanical sources
Appearance:	Opaque, white to pale yellow liquid
Current flavor range:	<p>Peachy Keen: Flavors of ripe peach, fleshy sweet fruits, some tropical notes like passionfruit, and a slight berry background</p> <p>Cosmic Guava: Flavors of ripe guava, fresh basil oil, cannabis, candy-like notes of bubblegum, and tangerine</p> <p>Pineapple Paradise: A complex blend of candied and fleshy pineapple, rounded out with passionfruit juice and undertones of citrus zest and stone fruit</p> <p>Pomelo Daydream: A distinct pomelo and grapefruit flavor, complemented by a slight tropical sulfur, reminiscent of a fresh juice mix</p>

Specific Gravity: 1.01 – 1.05

pH: 2.5 – 4.0

QUALITY AND FOOD SAFETY:

HAAS® maintains food safety and quality management systems registered to the FSSC 22000 and ISO 9001 standards. Please refer to our website (www.johnihaas.com) for more information on our systems and programs.

PRODUCT USE:

All the flavors in the EUPHORICS™ product line are completely water soluble and solvent free, and are intended for addition to the final beverage, prior to packaging. A suggested usage rate of EUPHORICS™ is listed in Table 1 for different beverage matrices. We recommend laboratory scale trials to determine which concentration gives the desired effect. On the lower end of the suggested dosing rate, the evaluations can be carried out using a minimum of 32 fl oz (946 mL) of beverage, using a 10-100 µL micropipette.

On a production scale, EUPHORICS™ may be added without prior dilution to beer and other beverages after the final filtration, preferably by metered injection into a turbulent liquid stream during transfer. Alternatively, it can be dosed directly into a bright beer tank, with or without the use of a brink or other external vessel. Laboratory tests showed that EUPHORICS™ can be added to beer without deterioration in foam stability. EUPHORICS™ products are light-stable.

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Matrix	EUPHORICS Dose rate (% v/v)	Bench trials: dose for 32 fl oz (0.95 L) of beverage
Beer and NA Beer	0.003 – 0.010	28 µL - 95 µL
Waters and Tea	0.001 – 0.006	10 µL - 57 µL
Hard Seltzers & FMB	0.001 – 0.010	10 µL - 95 µL

Table 1. Suggested usage rate ranges and guidelines for benchtop trials.

Please refer to our General Description and Application Guidelines, as well as to our EUPHORICS™ White Paper for additional information.

PACKAGING:

Containers meet all food industry packaging regulations.

STORAGE AND BEST-BY RECOMMENDATION:

Store the product in refrigerated conditions. Do not freeze.

When stored under refrigeration (35 – 46 °F / 2 - 8 °C), in airtight sealed containers, EUPHORICS™ is stable for up to 12 months. To preserve freshness, the product should not be stored at ambient temperature (71.6 °F/22 °C) for more than 3 months. For open containers, we recommend blanketing the headspace with nitrogen gas before resealing. Once opened, keep containers refrigerated and use within 1 month.

SAFETY:

Any material that contacts skin should be washed off with soap and water. For more information, download the relevant Safety Data Sheet (SDS) from the HAAS® website.

LABELLING

When used in beer and other alcoholic and non-alcoholic beverages, EUPHORICS™ should be declared as a Natural Flavor, according to guidance from the Food and Drug Administration. Follow recommended nutritional labeling guidelines as may apply to the specific beverage type. This product contains ingredient(s) which are approved for use by the Food and Drug Administration (FDA) and/or are listed as Generally Recognized as Safe (GRAS) for use in beverages on a reliable, published industry association list pursuant to 21 CFR 101.22.

Alcohol and Tobacco Tax and Trade Bureau (TTB)-approved. Flavor Ingredient Data Sheets (FIDS) are available upon request.

TECHNICAL SUPPORT:

We are pleased to offer support for the many uses and applications of this product and can be contacted at brewing.solutions@johnihaas.com.