



Hop Oil Emulsion

GENERAL

Hop Oil Emulsions are prepared from distilled Hop Oils or oil rich extracts and contain food grade emulsifiers. They are available from most commercial hop varieties.

1. Emulsions made from distilled Hop Oil contain essential oil of hops with food grade emulsifiers. Oil content is normally standardized to 2500ppm (0.25%) by volume. These emulsions are suitable for use in light-stable beers.
2. Emulsion made from Oil rich extracts containing essential oil of hop and some hop resin in aqueous emulsion with food grade emulsifiers. Oil content is standardized either to 1,000 ppm (0.1%) or 10 000 ppm (1.0%) by volume.

CHARACTERISTICS

The emulsions convey the characteristic aroma and flavor of the hops from which they are prepared. They are fully dispersed in an aqueous emulsion, and they provide all the benefits of Pure Hop Oils but in the form of an emulsion that is readily dispersible in beer and therefore easy to handle. The hop oil compounds are predominantly terpene hydrocarbons.

Hop Oil Emulsions represent a cost-effective easy-to-use hop oil formulation. They provide a 'Dry Hop' character by addition to beer either pre- or post-fermentation. Emulsions produced with distilled Hop Oil may also be used to provide "late hop" aroma in beers brewed with reduced isomerized products for light protection.

PRODUCT SPECIFICATIONS

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| Description | an off-white aqueous dispersion of hop oil and food grade emulsifiers. |
| Density | approx. 1.0 g/ml |
| Heavy Metals | Meets current EU and US FDA regulations |
| Lead | Meets current EU and US FDA regulations |
| Pesticides | Meets current EU and US FDA regulations |
| Hop oils | 0.1 - 1.0 % of specified variety (or specified blend) |



QUALITY AND FOOD SAFETY

Barth-Haas maintains quality management systems registered to the ISO 9001 standard, as well as food safety management programs based on internationally recognized (HACCP) principles. Please refer to our web site (www.barthhaas.com) for more information on our systems and programs.

PRODUCT USE

Hop Oil Emulsion may be added pre-filtration preferably between fermentation and racking back where yeast counts are below 0.5×10^6 cells per ml. Addition rates of Hop Oil Emulsion should be adjusted to give 0.5-2.0 ppm hop oil in the finished beer. (e.g. 2 ppm pure hop oil = 20 ml emulsion/hl beer of a 1% standardized emulsion) dependent upon the intensity of aroma and taste required and the characteristics of the base beer.

When used to provide "late hop" character we suggest Hop Oil Emulsion may be metered into a hot wort transfer pipe/line over as large a volume as possible. For "late hop" character we recommend addition rates of 1 ppm - 10 ppm hop oil (e.g. 10 ppm pure hop oil = 100 ml emulsion/hl beer of a 1% standardized emulsion). This will be dependent upon the point of addition, characteristics of the base beer as well as the intensity of aroma and taste required. Dosing experiments, using a pipette or microliter syringe will give useful indications of the required quantity.

PACKAGING

20 or 25 kg HDPE drums or 1000-liter IBC's. Smaller packaging options are available on request.

STORAGE AND BEST-BY RECOMMENDATION

Store in full, closed containers at 3° to 6°C (37-43 °F). We recommend the usage within 6 months. After 6-month storage, it is recommended that an analysis is carried out to determine its activity for dosage adjustment if necessary.

ANALYTICAL METHODS

For the analysis of the composition of hop oils, gas chromatography (GC) techniques are used. Details of methods are available on request.

SAFETY

Any material coming into contact with the skin should be washed off with soap and water. For more information download the relevant Safety Data Sheet (SDS).

TECHNICAL SUPPORT

We will be pleased to offer help and advice on the use of Hop Oil Emulsion in brewing.

E-Mail: Brewingsolutions@barthhaas.de