



TotallyNaturalSolutions®  
hop aromas & flavours to inspire

## HopBurst® – Dry Hop Aroma

HopBurst® is a flowable, natural 100% hop extract prepared from hop cones or pellets by innovative extraction and distillation methods. HopBurst® consists of hop oil components in a soluble carrier.

HopBurst® provides an easy to use, reproducible method of adding intense hop aroma to beer without the beer losses! An addition of HopBurst® gives a 'dry hop' aroma to beer that is characteristic of the specific variety of hops from which it is prepared. The extract can also enhance pleasant existing flavours and mask some off-flavours in the beer.

### Light stable

All products are free of iso and alpha acids and can be used with any beer packaging type.

### Fully soluble

HopBurst® utilisation is 80% if used in late stage fermentation and up to 100% if dosed direct to bright beer.

### Easy handling

Flowable hop extract provided as a standardised solution for dosing into bright beer.

### Natural, clean label

100% extract from hops by physical processes.

## Hop Varieties

Totally Natural Solutions offers a comprehensive range of hop extracts from main growing regions in Europe, New Zealand and the USA.

<u>Product Name</u>	<u>Character</u>	<u>Typical Dose Rate</u>	<u>Suggested Beer Style</u>
HopBurst® Cascade	Grapefruit, citrus, floral	10ml/hl	Classic Craft Pale Ale
HopBurst® Limonata	Lemon, fresh, hoppy	10ml/hl	Refreshing Craft Dry hop lager
HopBurst® Citrulicious	Intense, citrus, fruity	20ml/hl	West Coast IPA
HopBurst® Chinook	Piney, citrus fruity	20ml/hl	IPA, DIPA
HopBurst® Magnifico	Tropical fruits	15ml/hl	NEIPA

## Product Specifications

Description: water white solution, can be hazy

Odour: characteristic of named hop variety

Specific gravity (20°C) 1.030 – 1.040

Flash point: >90°C (194°F)

## Product use

HopBurst® extracts replace or reduce the charge of hop pellets used in dry hopping. Therefore improving beer consistency, reducing microbial risks and reducing beer loss through absorption onto the hop leafy material.

The extracts are 100% hop and are used strategically to provide:

### Late Stage Differentiation

The products can be used to differentiate from a single wort stream or to add layers of aroma and flavour to an existing product.

### Premiumisation

Small additions of HopBurst® to an existing beer can add a premium hop aroma, enhancing the existing beer to a new height.

### Pivoting and New Product Development

Development times are dramatically reduced as benchtop evaluations can provide indicative beer character. TNS can support NPD work.

### Cost Reduction

Improved utilisation will reduce the cost in use and realise no beer loss when using HopBurst®

HopBurst® is fully soluble in beer and intended for addition to fined or filtered beers. They can be dosed into finished beer without the need for subsequent filtration, with gentle mixing required for maximum effect. The optimum way of dosing HopBurst® products is with an in-line dosing system into the beer stream on transfer to the bright beer tank or racking vessel.

HopBurst® can also be added direct into the finishing vessel prior to transferring the beer, where the transfer provides mixing. For dosing direct to casks, we recommend doing so either during the racking process or into the full cask. HopBurst® should be added separately from cask finings.

## Product Development

Trials to determine the concentration required for balanced beer aroma and flavour effect should start with initial dose rate of 10ml/hl of HopBurst®.

- This can be dosed to a bottle of beer using a pipette at a rate of 0.1 µL/ml bottle volume (i.e for a 330 ml bottle dose 33 µl).
- Chill the beer to normal drinking temperature and add the required volume of HopBurst® into the beer.
- Re-cap the bottle, inverting to mix and then chill for minimum 2 hours before tasting.

## Dose rate

Typical dose rates are in the range of 5 – 40 ml/hl (0.05 – 0.4 ml/l).

Depending on the base beer style and the effect you want to achieve the dose rate can be altered within this range.

A good starting dose is 10ml/hl equivalent. (Note 1ml is equivalent to 10ppm)

## Calculation example

	<i>Equivalent</i>	<i>Equivalent</i>	<b>Dose rate</b>	<b>Addition rate</b>
36 gallon barrel	<i>288 pints</i>	<i>163 litres</i>	10ml per hl	16.5 ml per barrel
9 gallon cask	<i>72 pints</i>	<i>41 litres</i>	10ml per hl	4ml per cask

Bench top trials can be viewed at our website [www.totallynaturalsolutions.com](http://www.totallynaturalsolutions.com)

## Packaging

Standard packaging for HopBurst® is a 1 litre or a 5 litre aluminium flask, or 20lt steel lacquered drums.

Small pack, 15ml and 100ml bottles are available on our webshop.

## Storage and shelf life

HopBurst® are stable in unopened containers for at least 24 months in the packaging supplied and should be stored at 5 - 25°C. Once opened they should ideally be used within 3 months.

## Regulatory

HopBurst® are made using clean label technologies, without solvent residues or chemical reagents.

In the European Union they may be classified as natural hop flavouring or hop extract according to the flavouring legislation (EU1334/2008EC).

In the USA, HopBurst® is classified as a natural extractive, since essential oils, oleoresins and natural extractives (including distillates) from hops are GRAS for their intended use (21.C.F.R. § 582.20)

—  
With our **KNOWLEDGE** and **PASSION** we create **INNOVATION**  
—