



Totally Natural Solutions

HopZero®



General

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

Characteristics

Specifically developed to deliver a totally natural hop solution to formulating low alcohol products that cannot be adequately addressed by the use of traditional hops. The entire range meets the European natural flavouring legislation (EC/1334/2008).

Light stable

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

Fully soluble

HopZero® utilisation is up to 100% if dosed direct to bright beer.

Easy handling

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

Natural, clean label

100% extract from hops by physical processes.

Product Range

HopZero® Body is a hop fraction that adds light hop floral notes to a low or zero alcohol beer, whilst simultaneously building body and fullness. It also delivers a satisfying rounded mouthfeel to low alcohol beers that are formulated using malt extracts or have been diluted from de-alcoholised bases.

HopZero® Dry is a unique hop product that introduces a dry and slightly astringent quality to low or zero alcohol products and crisp dry bitterness when used with natural isomerised extract. Excellent in providing the drying palate of Pilsner style lagers or in Stout.

HopZero® Clarity is our natural hop aroma product that cuts through the sweet, worty characters of low alcohol beer, providing a subtle, spicy hop aroma and leaving a clean refreshing palate.

HopZero® Fruity has been developed specifically to restore the fruity notes naturally produced during fermentation and missing from traditional low or zero alcohol products



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Product Specifications:

Description: water white solution, can be hazy

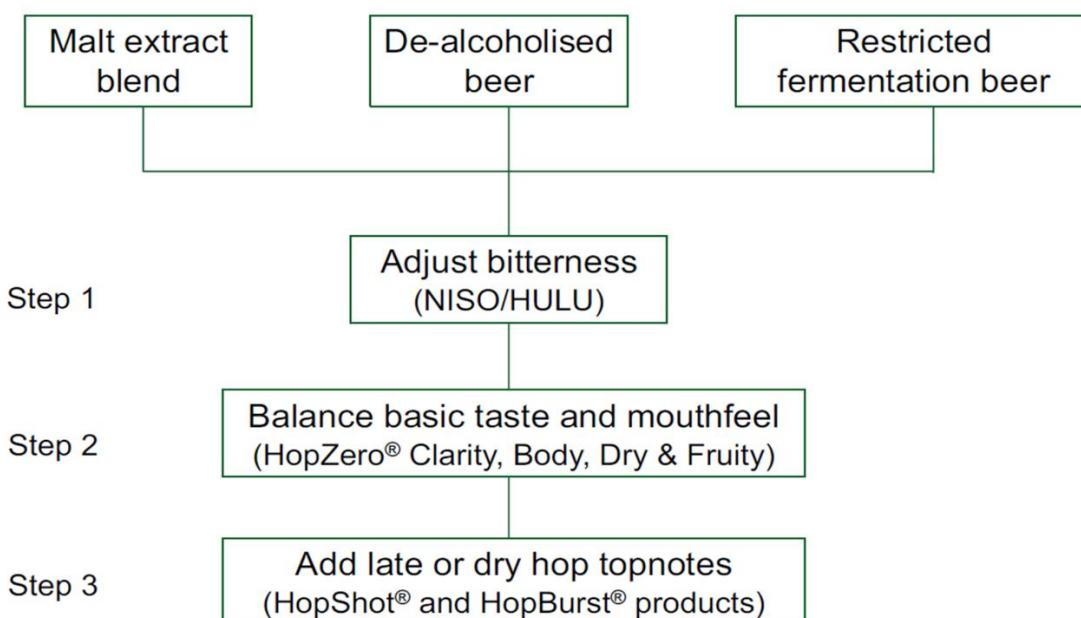
Odour: Characteristic hoppy odour of named compound consistent with retained sample.

Specific gravity (20°C) 1.030 – 1.050

Flash point: >90°C (194°F)

Product use:

The HopZero® range can be used in all zero or low alcohol beverage formats whether they are formulated with malt extracts, de-alcoholised using distillation or reverse osmosis or produced by a stopped fermentation method.



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 HopZero®.

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 HopZero® into the beer. Re-cap the bottle, inverting to mix and then chill for minimum 2 hours before tasting.



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Dose rate:

Typical dose rates are in the range of 5 – 40 ml/hl (0.05 – 0.4 ml/l). Dependent on base beer style and desired effect. Dose rate can be altered within this range. A good starting dose is 10ml/hl equivalent. (Note 1ml is equivalent to 10ppm)

Calculation example for a barrel or cask –

	<i>Equivalent</i>	<i>Equivalent</i>	Dose rate	Addition rate
36 gallon UK barrel	<i>288 pints</i>	<i>164 litres</i>	10ml per hl	16ml per barrel
9 gallon cask	<i>72 pints</i>	<i>41 litres</i>	10ml per hl	4ml per cask
31 gallon US barrel	<i>206 pints</i>	<i>117 litres</i>	10ml per hl	12ml per barrel

Bench top trials can be viewed at our website: www.totallynaturalsolutions.com

Packaging:

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

6 x 15ml sample packs, 100ml and 1L bottles are available on our webshop.

Storage and shelf life:

HopZero® are stable in unopened containers for 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:

HopZero® 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, HopZero® 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)