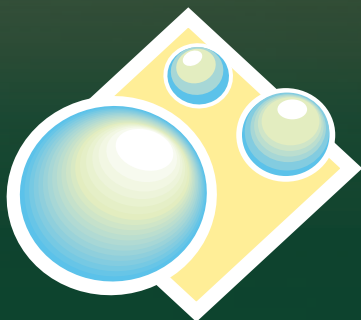




Invert Sugars
and blends offer
innovative technical
solutions to a range
of **application**
challenges

Invert Sugars and Blends



Our Invert Sugars bring considerable benefits to many different food applications, including cakes, cookies, breads, icings, fondant creams, confectionery, soft drinks, fruit sauces and chilled desserts

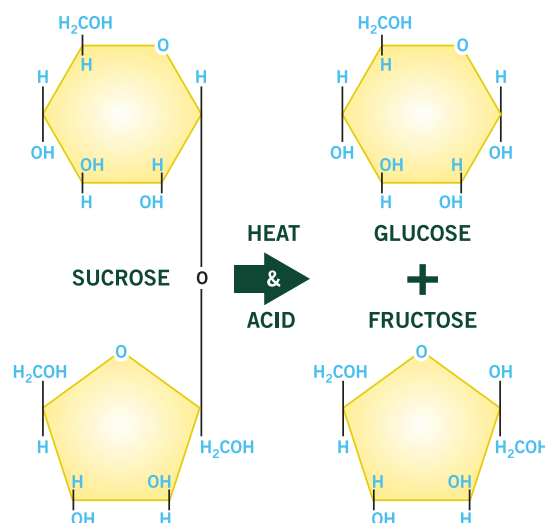


Invert Sugars and Blends

What is an invert?

Sugar – sucrose – is made up from one molecule each of the monosaccharides glucose and fructose. By dissolving the sugar in water and applying both heat and acid, sugar can be broken down (or ‘inverted’) into its constituent parts: glucose and fructose.









This process allows us to **create a range of syrups with varying physical properties**. This increase in the number of molecules present affects the physical properties of an invert e.g. water activity, freezing point depression.



The benefits of Inverts in production

- A customised, ready-to-use invert can minimise the handling of acids and other ingredients, which saves time and reduces the need for control in critical processes
- Inverts help deliver a consistent, high quality and tailored product, time after time
- Inverts permit a range of delivery formats including heated, automated systems for high solids and high viscosity syrups
- Lower solids inverts are available for reduced viscosity and easier handling

The Invert range

Product (Product Code)	Properties	% Solids (°Brix)	Colour (ICUMSA)
Invert No. 1 55946 – 1.25 tonne 57880 – bulk tanker	Full inverted sugars (glucose / fructose)	80.0-80.6	Pale straw colour, <80 
Invert No. 2 57881 – bulk tanker	Full inverted sugars (glucose / fructose)	77.7-78.3	Pale straw colour, <80 
Invert No. 4 50942 – 25kg 55905 – 1.25 tonne 57883 – bulk tanker	Full inverted sugars (glucose / fructose)	75.9-76.9	Pale straw colour, <100 
Invert No. 5 55884 – 1.25 tonne 57884 – bulk tanker	Full inverted sugars (glucose / fructose)	72.0-73.0	Pale straw colour, <100 
Medium Invert 55897 – 1.25 tonne 57930 – bulk tanker	Partial inverted sugars (glucose / fructose / sucrose)	73.5-74.5	Clear colour 
Partial Invert No. 3 55922 – 1.25 tonne 57923 – bulk tanker	Partial inverted sugars (glucose / fructose / sucrose)	73.4-74.0	Clear syrup 
Invasweet 50959 – 25kg 55959 – 1.25 tonne	Full inverted sugars (glucose / fructose)	68.0 -70.0	Pale straw colour, <100 
Bespoke liquid sugar and syrup blends	Bespoke invert syrup blends with sugar glucose, other flavours and natural ingredients	60.0-84.1	Clear to Yellow 25-100 

If you require more information, e.g. a product specification sheet, a sample or advice, please contact us to discuss your needs.

Invert Syrup: keeps products moist and extends shelf life



Benefits of Invert Syrup

Cost effective sweetness

Due to the mix of sugars – sucrose, glucose and fructose and the sweetness synergy between sucrose and fructose, Medium invert delivers an increased sweetness for the same solids when compared to sucrose alone. This extra sweetness is useful in fruit flavoured drinks where around **20% less carbohydrate sweetener can be used** than would be the case with a standard invert.

Keeps food moister, fresher

Invert syrup has a high affinity for water, so an invert syrup (a 'humectant') is often used to **keep products moist and extend their shelf life**. This additional moisture retention is especially important in low fat baked goods such as cakes, soft cookies and bread rolls, since these products can become dry and stale much quicker than their full fat counterparts.

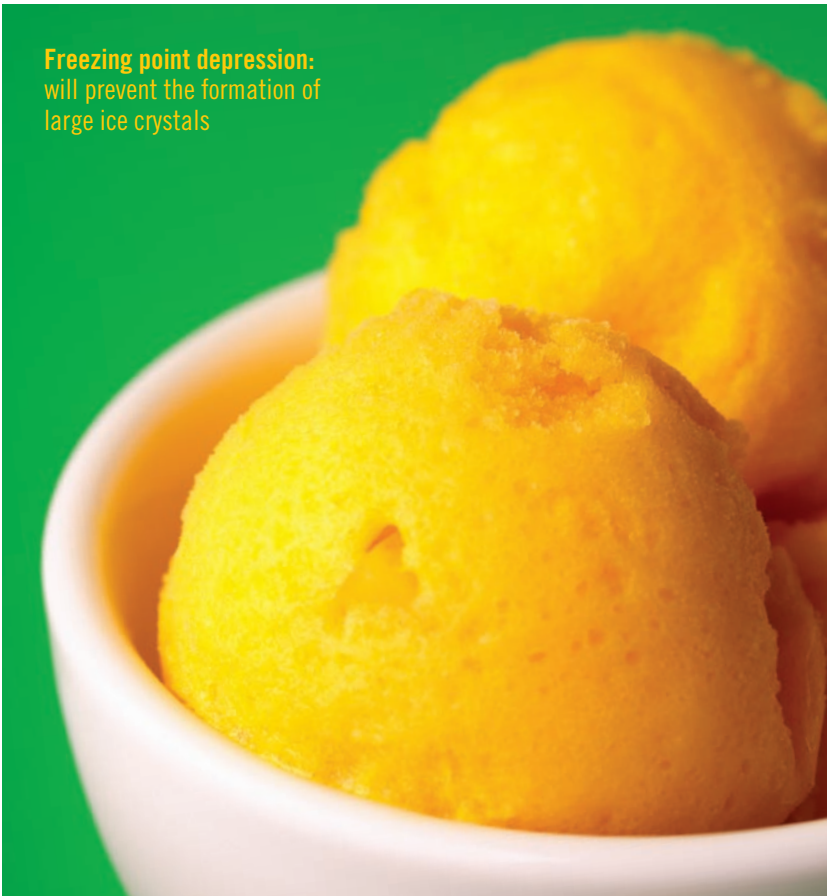
Invert syrup can also be used in place of glycerol as the humectant in cakes, where it brings additional benefits such as **enhanced fruit flavours, extra sweetness, enhanced colour** and **improved flavour development during cooking**.

Minimises crystallisation

Invert syrups can slow down and minimise crystallisation. They can, for example, **keep icings and fondants soft and smooth throughout their shelf life**. This ability is also **useful in low temperatures** – for example, where softness must be retained during freezing.

Some jam recipes with low acid fruits produce very little sucrose inversion during boiling. So the addition of an invert at the start of the boil can prevent the jam from crystallising.

Freezing point depression: will prevent the formation of large ice crystals



Preservation - water activity reduction (A_w)

If a product has a high 'water activity' it may be more prone to microbial contamination which in turn may reduce the shelf life.

The increased number of molecules in an invert syrup causes an increase in osmotic pressure and inhibits microbial growth so it acts as a more effective preservative.

Freezing point depression

Use of an invert syrup can also lower the freezing point of solution and **prevent the formation of large ice crystals**. This is ideal for many products, including:

- soft, easy-scoop ice creams and sorbets
- baked goods held in frozen storage prior to being released to retailers
- freeze/thaw-stable fillings of cakes and toppings



Invert Sugars and Blends



Product development

If you have a specific requirement not covered by our standard range please talk to us about bespoke options (and their lead times).

Bespoke inverts offer:

- Specific functional properties
- Fewer ingredients to handle
- Fewer process steps
- Delivery of consistent formulas for unique consumer products

Flavour enhancement

The fructose in an invert syrup has a **natural synergy with acid and fruit flavours** and therefore can enhance these flavours in applications such as:

- soft drinks
- baked goods containing fruit
- fruit-flavoured confectionery

Flavour and colour development

Invert syrups have a higher tendency to develop colour and therefore **enhance colour development** during the manufacture of:

- toffees
- caramels
- fudges

Texture softening

Invert syrup's natural affinity for water and its ability to reduce crystallisation can give products such as the following a **soft, pliable texture and extended shelf life**:

- American style cookies
- sweet pancakes
- hamburger buns
- liquorice allsorts



Texture softening:
gives a soft, pliable texture

Stabiliser

Inverts are used extensively in the production of elixir and cough linctuses giving:

- smooth mouth-feel
- palatable delivery
- suspension of active ingredients

Increases viscosity

High brix inverts are useful:

- as a binding syrup in cereal bars
- to plasticise icings
- to reduce the viscosity of fondant creams