

**CO<sub>2</sub>Sustain<sup>®</sup>**

**Less CO<sub>2</sub>  
more fizz.**

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Navigating global shortages of CO<sub>2</sub> whilst delivering a superior product that stays fizzier for longer.



# How can LESS CO<sub>2</sub> give you a fizzier drink?

At a time of critical carbon dioxide shortages, CO<sub>2</sub>Sustain offers a lifeline for fizzy drinks manufacturers.



## What is CO<sub>2</sub>Sustain?

Known as ingredient 436/E436, CO<sub>2</sub>Sustain is a tasteless, patented liquid additive for carbonated soft drinks (CSDs) which improves their carbonation. It is added directly to concentrated syrup, either in production or at point-of-sale dispensing.

Adding CO<sub>2</sub>Sustain to a carbonated soft drink (CSD) makes the drink fizzier – *and fizzier for longer.*



## How does it work?

CO<sub>2</sub>Sustain enhances the solubility of CO<sub>2</sub> in the liquid while also encapsulating each bubble of CO<sub>2</sub> as it forms.

This encapsulation makes the bubbles smaller and stronger, prevents them from merging, slows their ascent to the surface, and causes them to last longer. This means that there's less CO<sub>2</sub> loss through fobbing, both at the time of opening and pouring by the consumer and on the fill-line during production.





### What are the benefits of CO<sub>2</sub>Sustain?

- Cuts CO<sub>2</sub> procurement needs (and costs) by around 12.5%
- Extends carbonation shelf life shelf life by around 4 weeks
- Helps manufacturers to lightweight their PET
- Enables manufacturers to prepare for peak demand periods
- Protects retailer relationships and helps assure certainty of supply with fewer returns
- Protects consumer relationships and delivers better brand experiences

**Add weeks to the shelf life of  
your drinks with CO<sub>2</sub>Sustain**

# Manufacturers benefit all round adding **less CO<sub>2</sub>** with CO<sub>2</sub>Su

## Optimise your CO<sub>2</sub>

### Cut procurement by over 12%

Adding 0.1g of CO<sub>2</sub>Sustain per litre of liquid allows manufacturers to reduce the amount of CO<sub>2</sub> they need by around 12.5%, with no impact on taste. This reduces procurement headaches and cuts costs at a time of severe CO<sub>2</sub> shortages in many territories – in part as a result of the global fuel-cost crisis.

Alternatively manufacturers can choose to make **12.5% more drinks for the same amount of CO<sub>2</sub>**.

## Lightweight your PET

### Without losing any more CO<sub>2</sub>

Manufacturers are always looking to lightweight their PET in response to sustainability demands. However, the challenge is that lighter plastic just accelerates the rate of CO<sub>2</sub> loss and weakens the bottle. The headspace in a plastic drink bottle, between the surface of the liquid and the cap, is a weak point from which CO<sub>2</sub> under pressure will inevitably seep.

But since CO<sub>2</sub>Sustain allows manufacturers to use around 12.5% less CO<sub>2</sub>, the gas pressure inside the bottle is reduced by a commensurate amount. This means manufacturers can use less PET in their bottles because of the reduction of CO<sub>2</sub> in the bottle.

## Extend your shelf life

### Get another 4 weeks

The typical carbonation shelf-life of a CSD in a PET bottle is between 3 and 4 months, compared to an indefinite time in cans and glass bottles. This is due to unavoidable CO<sub>2</sub> seepage through plastic.

Major soft drinks manufacturers won't allow the consumer's CO<sub>2</sub> experience to drop below 6.2g/litre. However, adding CO<sub>2</sub>Sustain can allow the CO<sub>2</sub> to drop to 5.6g/litre - saving 0.6g of CO<sub>2</sub> per litre, and with an exact sensory match retained. With a known loss of around 0.1g per week, this permits a minimum of 4 weeks extra shelf life.

The usual shorter shelf life means manufacturers are limited by how much they can produce and store in advance, for periods of peak demand – but CO<sub>2</sub>Sustain gives them much greater flexibility. And since any stock past its sell-by date needs to be returned to the manufacturer at their cost (creating unnecessary plastic and water waste from CSDs needing to be destroyed) CO<sub>2</sub>Sustain saves cost and hassle here, too.

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## Dispense - extra benefits

CO<sub>2</sub>Sustain can be added to syrups for use in point-of-sale dispensing systems, an environmentally friendly option which can cut transport-related energy requirements and CO<sub>2</sub> emissions. As a halo effect CO<sub>2</sub>Sustain can also thereby cut the transportation involved in packaging, waste, recycling and landfill.

In particular, since CO<sub>2</sub>Sustain allows CSDs to use around 12.5% less CO<sub>2</sub>, this also cuts the environmental costs of transporting that CO<sub>2</sub> by a commensurate amount – which is especially helpful at a time when CO<sub>2</sub> is in short supply. Or as already mentioned, produce 12.5% more drinks for the same amount of CO<sub>2</sub>.

## Lose less CO<sub>2</sub>

### Fill faster by wasting less CO<sub>2</sub>

CO<sub>2</sub>Sustain significantly reduces fobbing during filling, even at higher temperatures (up to 18°C). Fobbing causes a loss of CO<sub>2</sub>, which leads to waste and rejects on the filling line. Preventing excess foaming in this way cuts CO<sub>2</sub> wastage while allowing filling lines to start up and run up to 25% more rapidly.

## Could you make the switch?

Switching to CO<sub>2</sub>Sustain is rapid and straightforward. The additive requires minimal stirring and no heating, and the optimum dosage is just 0.1g/litre. CO<sub>2</sub>Sustain has global regulatory approvals including EFSA, CODEX and GRAS. We offer free taste trials and will also support full production-run trials.





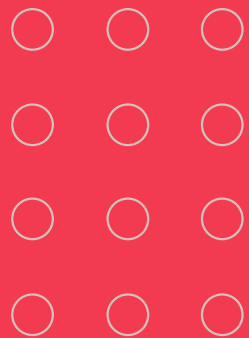
It all starts with...

# Clever Carbonation

# A single safe, tasteless and low-cost liquid additive that can significantly support manufacturers on their journey to greater sustainability.

CO<sub>2</sub>Sustain can play an important role in:

- Reduces the amount of CO<sub>2</sub> soft drinks manufacturers need to use
- Reducing plastics – by helping to lightweight PET bottles
- Increasing carbonation shelf life – by a minimum of 4 extra weeks
- Reducing transport costs – by supporting point-of-sale carbonation via dispense units
- Saving energy – by filling up to 25% faster.



## Test CO<sub>2</sub>Sustain for yourself

Our taste tests are free of charge, and you can choose the method that works best for you. You can ask us to do a lab trial for you; just send us your soft drink samples, we'll add CO<sub>2</sub>Sustain at the correct dosage, and send your samples back to you along with a detailed report explaining our testing methodology and our findings and recommendations. Alternatively, you can run the trial yourself – it's surprisingly easy, and we'll send you a tailored test kit.

Once you've been impressed by CO<sub>2</sub>Sustain, you'll want to be sure that scaling up to production will deliver the same results. We'll be happy to come to your site and support a full production trial.

For your own taste test trial, please contact us at:

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