

A man with a beard and short hair is shown in profile, drinking from a clear plastic bottle. He is wearing a light blue t-shirt. The background is a warm, orange-hued sunset or sunrise scene with a blurred crowd of people in the distance. The overall mood is refreshing and energetic.

TM2
from CO₂Sustain

One
technology.
Two powerful
solutions.

Better taste • Better fizz



Taste. Bubbles. Science.

It's in our DNA.

TM² a smart technology that makes soft drinks taste better, and carbonated drinks hold their fizz longer.

At CO₂Sustain we've always believed there's far more to a great soft drink than sweetness and sparkle alone. Great drinks are engineered through chemistry, through curiosity, and through a relentless obsession with how things taste and feel from the first sip to the last.

Our journey began with some simple questions:

Why do some drinks taste slightly 'off'? Why do carbonated drinks lose their fizz too fast? Or why does stevia foam uncontrollably in production?

To tackle these problems our team of chemists developed a new kind of technology. One that smooths out the negative aftertastes of high intensity sweeteners, stabilises carbonation and reduces foaming on pouring and on a production line when stevia is the chosen sweetener.

The result is TM² from CO₂Sustain a smart solution that makes soft drinks taste better and carbonated drinks hold their fizz longer.

One technology. Two powerful benefits.

A better beverage experience for everyone.

The challenges modern drinks face.

The rise of zero sugar. The rise of new problems.

Consumers want drinks that taste great and help them reduce sugar. But moving to high-intensity sweeteners such as stevia, sucralose, aspartame and Ace-K brings challenges that R&D teams know only too well:

Taste issues

High-intensity sweeteners often introduce:

- Bitter or metallic off notes
- A liquorice-like linger
- A slow, unbalanced sweetness curve
- Loss of mouthfeel and mid-palate body

These effects intensify in carbonated and acidic environments and can worsen over shelf-life.

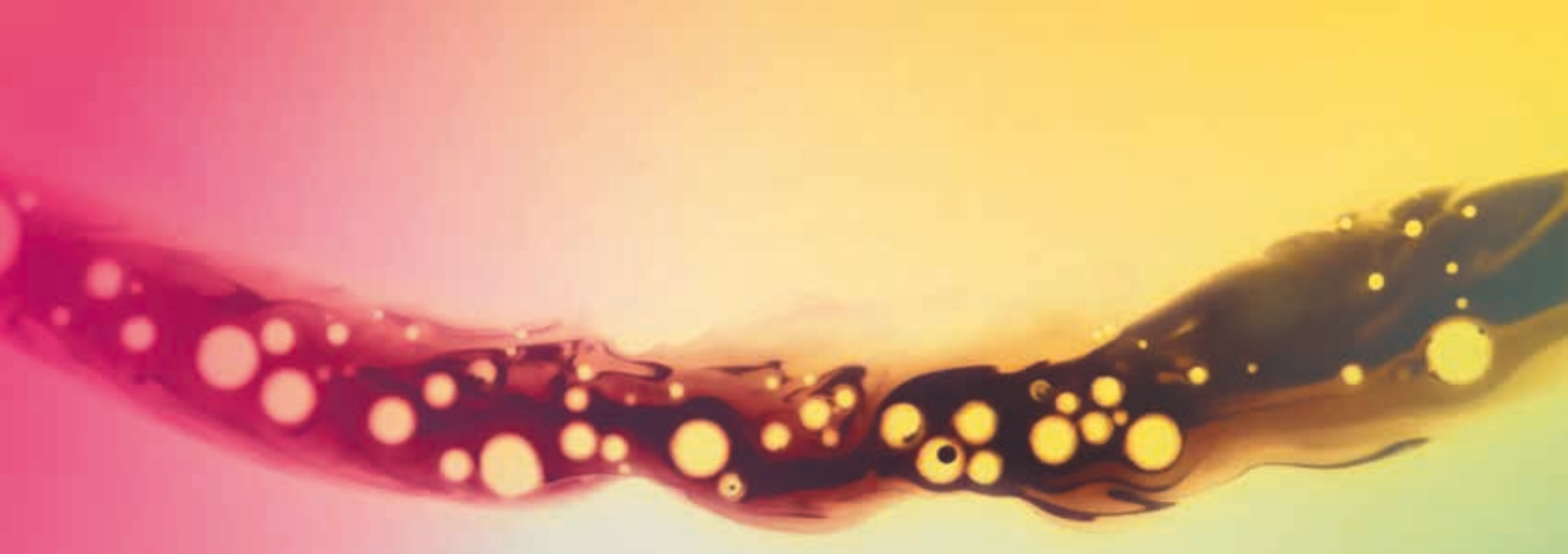
Carbonation issues

- Carbonation interacts with sweeteners in unwanted ways:
- CO₂ highlights bitterness
- Fizz drops off too quickly
- Consumers describe drinks as “flat” or “chemical” near the end of consumption
- Drinks foam excessively on pouring
- PET lightweighting makes carbonation retention even harder

These challenges increase complexity, cost and risk for formulation teams, often stretching R&D timelines and limiting innovation.

So, we designed a technology
to solve these challenges





It's all about a better
drink experience.

**TM² improves
off notes and
negative aftertastes.**

Taste drives everything, consumer acceptance, repeat purchase, brand loyalty. So, our first and most impactful functionality is TM² ability to transform the taste performance of high-intensity natural and artificial sweeteners.

TM² works with sweeteners to reduce undesirable taste characteristics while enhancing overall flavour clarity.

TM² reduces:

- Bitter aftertastes
- Astringent aftertastes
- “Chemical” or “artificial” impressions (overall negative aftertastes)

TM² enhances:

- Overall sweetness
- Sweetness onset
- Lasting sweetness
- Overall flavour harmony

By balancing the sweetness curve and smoothing out off-notes, TM² helps beverages feel more refreshing and more sugar-like even at zero sugar.

And when stevia is the sweetener of choice TM² shifts Reb A's taste profile to more like Reb M's

A man with a beard and safety glasses, wearing a white lab coat, is looking down at a glass beaker containing a liquid with many bubbles. The background is a soft-focus laboratory setting. A red name tag on his lab coat reads "CO₂Sustain".

The science in brief.

TM² influences how sweeteners interact with the palate, modifying aftertaste pathways and helps flavour ingredients integrate more smoothly in the final sensory profile, it does this by simply coating the more insoluble parts of the ingredients.

The result?

A better-tasting drink that consumers are more likely to choose again.



TM²
from CO₂Sustain

TM² in action.

We have been working with well-respected independent providers of sensory and consumer research to evaluate TM²'s performance. Using scientifically validated taste tests to provide clear and objective insights. Sensory profiling assessment of four non-sugar sweetened still beverages was undertaken with the objective of comparing the sensory characteristics of all profiled products in terms of aftertaste.

Here we can see the results of external sensory testing of TM²

The sensory profiles for Lemon & Lime with and without modifier are shown in Figure 1. The comparison of the two profiles indicates that they have many similarities, however there is a difference between the products.

The product Lemon & Lime with modifier scored significantly higher than the Lemon & Lime without modifier for Lasting Sweetness.

The products scored parity for Sweetness Onset*, Overall Sweetness and all Aftertaste attributes.

Conclusion:

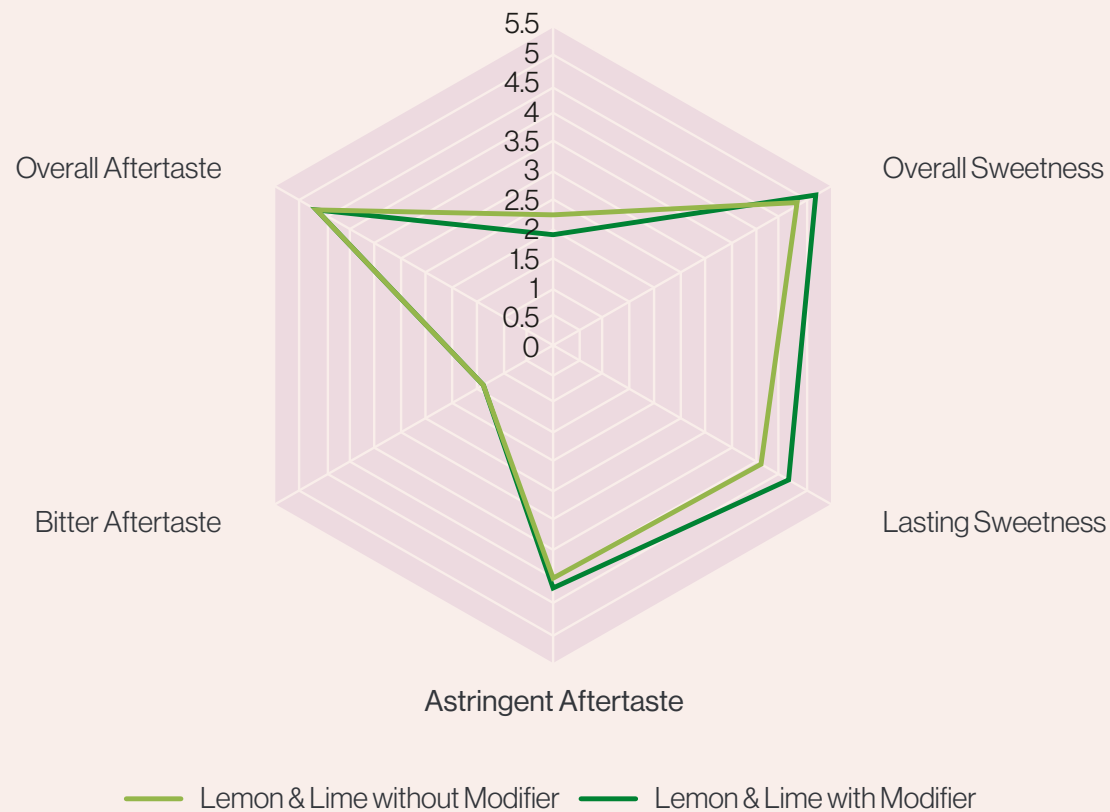
TM² (the modifier) has improved the overall and lasting sweetness of the drink.

* Sweetness Onset – low score = quicker onset

Test 1 – Lemon & Lime sweetened with Stevia

Figure 1.

Sweetness Onset*



* Sweetness Onset – low score = quicker onset

The sensory profiles for Peach Iced Tea with and without modifier are shown in Figure 2. The comparison of the two profiles indicates that they have some similarities, however there are also a number differences between the products. The Peach Tea with modifier scored significantly higher than the Peach Tea without modifier for Lasting Sweetness. The Peach Tea without modifier scored significantly higher than the Peach Tea with modifier for Bitter Aftertaste and Astringent Aftertaste.

Conclusion:

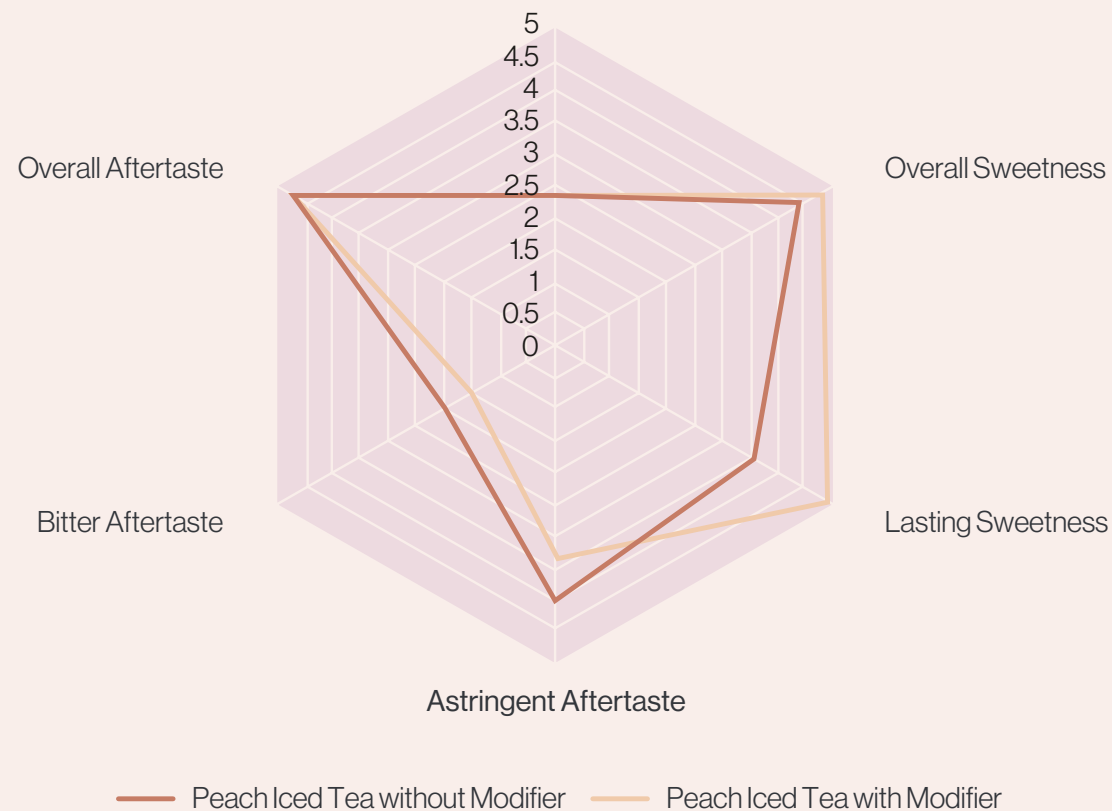
TM² (the modifier) has improved the overall sweetness, lasting sweetness, astringent and bitter aftertastes of the drink.

* Sweetness Onset – low score = quicker onset

Test 2 – Peach Iced Tea sweetened with Stevia

Figure 2.

Sweetness Onset*



* Sweetness Onset – low score = quicker onset

The sensory profiles for Tropical Juice with and without modifier are shown in Figure 3. The comparison of the two profiles indicates that they have some similarities, however there are also a number differences between the products.

The Tropical Juice with modifier scored significantly higher than the Tropical Juice without modifier for Lasting Sweetness.

The Tropical Juice without modifier scored significantly higher than the Tropical Juice with modifier for Sweetness Onset* (took longer), Bitter Aftertaste and Astringent Aftertaste

Conclusion:

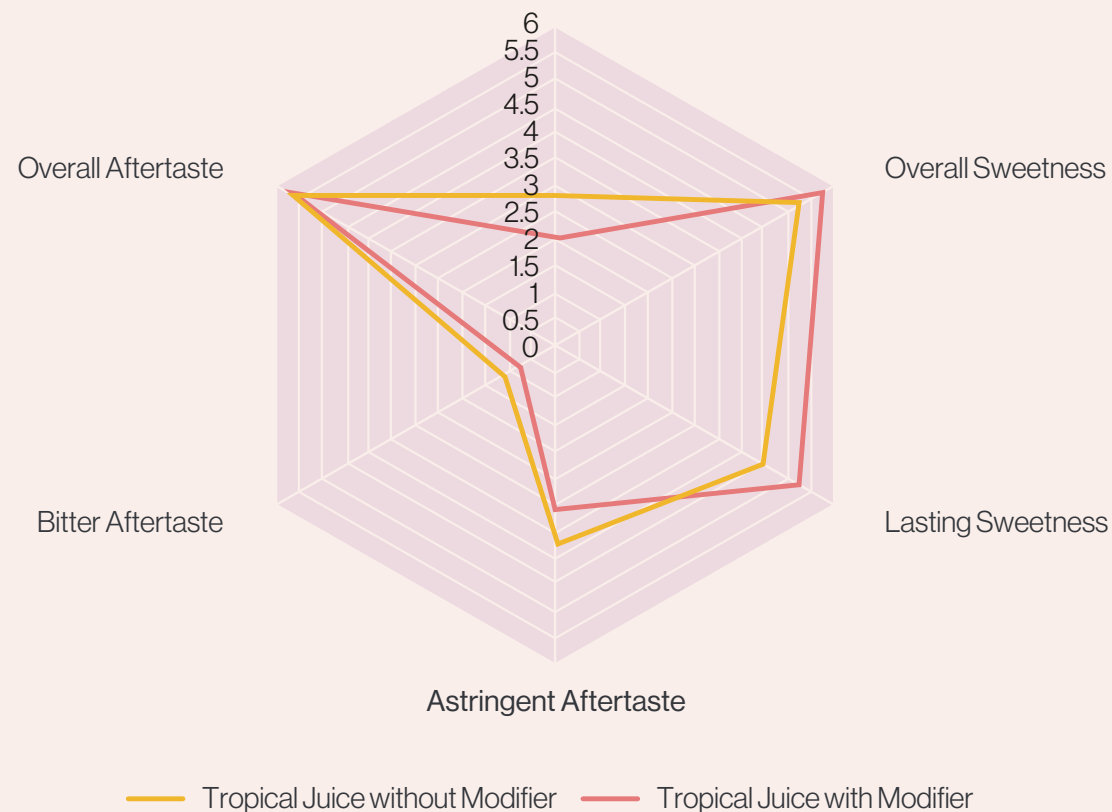
TM² (the modifier) has improved the overall sweetness, lasting sweetness, astringent and bitter aftertastes of the drink.

* Sweetness Onset – low score = quicker onset

Test 3 – Tropical Juice sweetened with Sucralose

Figure 3.

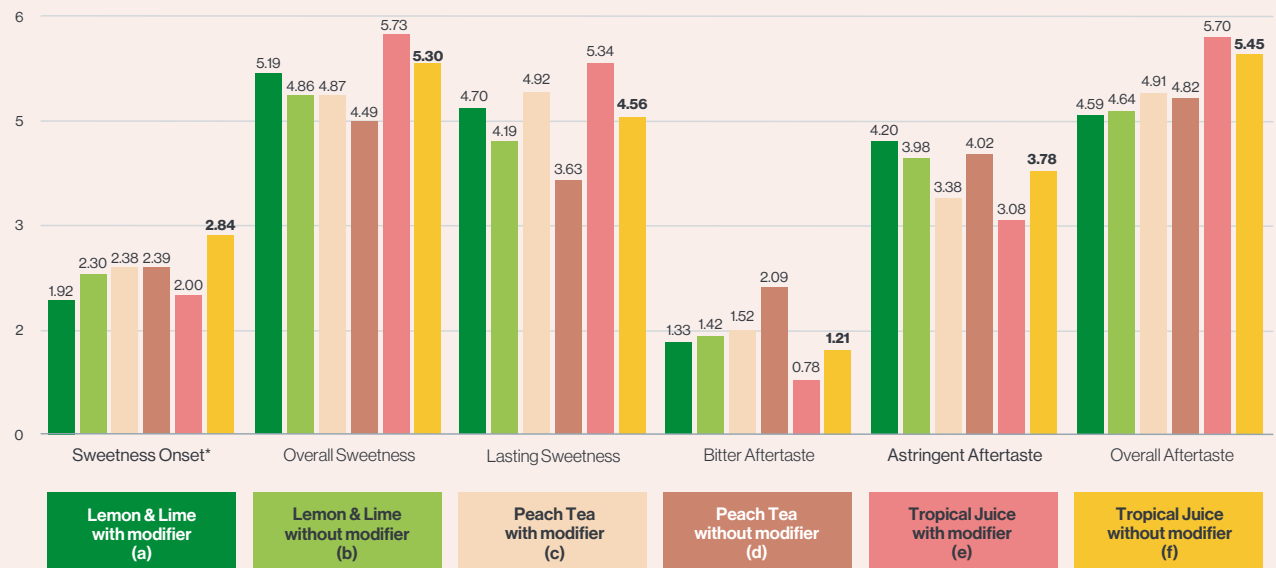
Sweetness Onset*



* Sweetness Onset – low score = quicker onset

The final graph outlines the mean panel scores across all drink sample types which clearly demonstrates the effectiveness of the TM² FMP against the criteria set.

Mean Panel Scores – All Products



* Sweetness Onset – low score = quicker onset



TM² retains carbonation and makes bubbles behave better.

Great fizz is more than taste or a feeling, it's a critical part of flavour delivery and drink satisfaction. Through years of carbonation research, our chemists discovered how to stabilise CO₂ more effectively inside the beverage.

How TM² works

TM² coats CO₂ bubbles during carbonation, making them:

- Smaller
- Denser
- More uniform
- Less prone to coalescing

This keeps CO₂ dissolved for longer and releases it more gradually during consumption.

Benefits:

- Fizz lasts longer in the glass
- Improved “tingle”, “bite” and sensory brightness
- Foam is controlled on pouring
- Drinks feel fresher for longer
- Carbonation shelf-life is extended
- PET lightweighting becomes more viable
- CO₂ usage can be reduced without compromising experience. Many manufacturers achieve 10 - 15% CO₂ savings or maintain the same sensory profile at lower carbonation levels.

Cleaner taste + better fizz = a superior drinking experience.



TM² reduces foaming
and improves
production efficiency
in carbonated drinks.

During filling, some sweetener systems create excessive foaming, especially high intensity natural and artificial sweeteners such as stevia. This leads to:

- Slower line speeds
- Product losses
- More restarts
- Inconsistent fills
- Headspace variation

TM² overcomes some of these problems by:

- Reducing foaming at the filler which leads to
 - Faster line speed
 - Fewer delays
 - Lower waste

You get better taste, better fizz
and smoother manufacturing —
all from one solution.



Our partnership with
your R&D team.

Smarter
formulation.
Faster progress.
Lower risk.

We work closely with technical teams around the world, supporting everything from early concept development to factory-scale implementation.

Our laboratory service includes:

- Taste optimisation testing
- Carbonation performance analysis
- Application guidance & dosing recommendations

You send syrup or finished product - We send back

- TM² treated samples
- Your original samples for comparison
- Taste testing data
- Carbonation data
- Clear conclusions and next steps

If you like what you taste and we're confident you will, our team can support you during a factory trial to ensure seamless integration.

Let's get started.

Better taste.

Better fizz.

TM² from CO₂Sustain™ gives beverage developers the freedom to create non or carbonated soft drinks that taste great and give an exceptional taste experience for consumers without complex reformulation or costly ingredient additions.

Whether you want to:

- Remove bitter aftertastes from sweeteners
- Create fizzier for longer drinks
- Extend carbonation shelf-life
- Reduce CO₂ usage
- Eliminate foaming issues

TM² is the simplest,
most effective
solution available.

Book your consultation with
one of specialists today.

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