

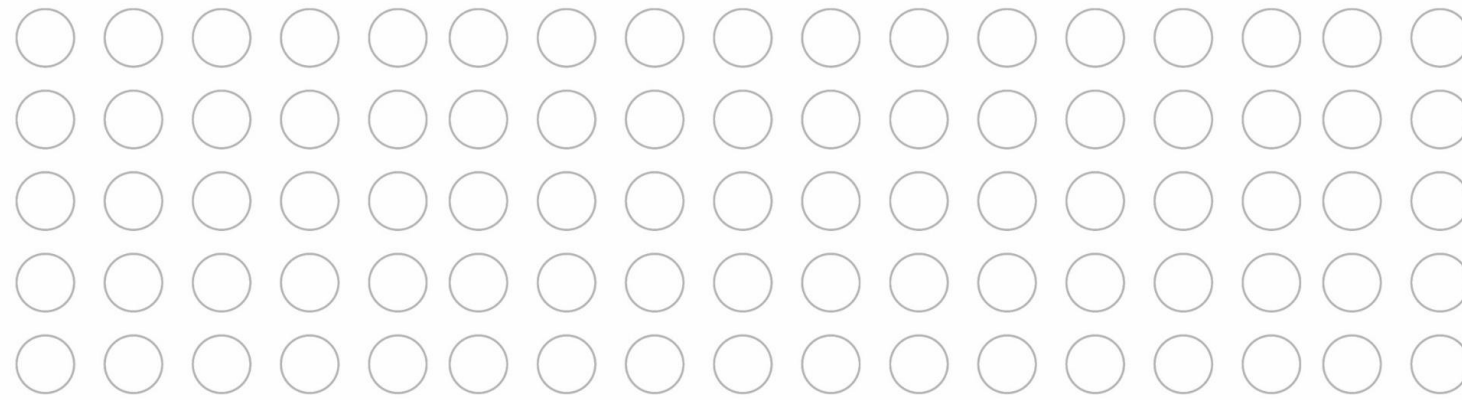


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WINNOVENT, our revolutionary liquid additive, represents a paradigm shift in the realm of carbonated soft drinks (CSDs), offering a myriad of benefits that align with both consumer preferences & sustainability imperatives.





In today's multifaceted sustainability landscape, CSD manufacturers face a plethora of challenges, ranging from environmental concerns to evolving consumer expectations.

As such, there is an increasing demand for innovative solutions that not only enhance production efficiency but also prioritize sustainability & consumer satisfaction. WINNOVENT addresses these challenges head-on by seamlessly integrating into concentrated syrups, empowering manufacturers to optimize their operations while significantly reducing environmental impact.

● The Sustainability Imperative

With the global spotlight on climate change & environmental sustainability, the CSD industry is undergoing a profound transformation.

Manufacturers are proactively seeking solutions to reduce CO₂ emissions, minimize plastic usage, & enhance energy efficiency throughout the production process.

● Redefining Carbonation & Sustainability

WINNOVENT lies its unique ability to encapsulate CO₂ bubbles, elevate carbonation and extend the shelf life of CSDs, thereby reducing waste.

Through its advanced encapsulation process, WINNOVENT ensures robust carbonation, even under challenging conditions such as bottle filling and consumer handling.

Furthermore, WINNOVENT enables manufacturers to optimize PET packaging, addressing concerns related to plastic usage and environmental sustainability.

By supporting lightweight PET bottles without compromising product integrity, WINNOVENT paves the way for eco-friendly packaging solutions.



..... Key Benefits of WINNOVENT:

Enhanced Carbonation:

WINNOVENT preserves carbonation, delivering a longer-lasting fizz and superior consumer experience.

Sustainable Packaging:

By reducing the need for heavy PET bottles, WINNOVENT promotes environmental sustainability & eco-friendly packaging practices.

Energy Efficiency:

WINNOVENT streamlines production processes, reducing energy consumption (e.g., increases filling temperature and filling speed), & operational costs for manufacturers.

Extended Shelf Life:

With WINNOVENT, CSDs maintain freshness for an extended period, minimizing waste & enhancing product quality across the supply chain.



How to use & evaluate functionality ●

Production techniques for carbonated drinks infused with WINNOVENT

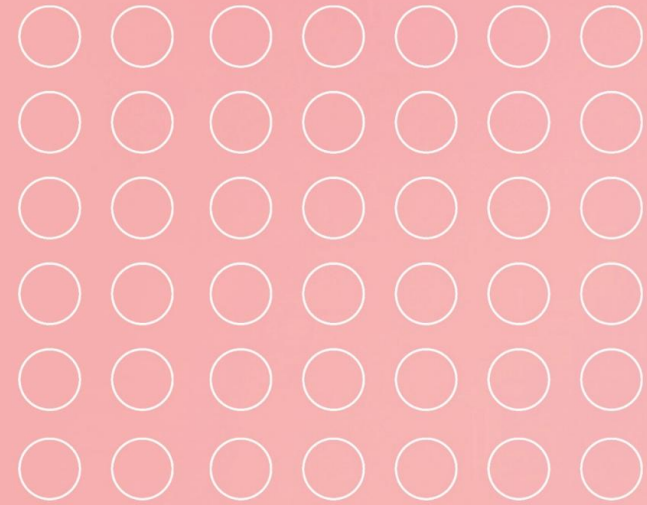
First Method

- Select two cola sodas produced on the production line
- Store the sodas in the refrigerator until they reach a temperature below 10 degrees Celsius
- Dilute 5 grams of stabilizing solution with 195 grams of water
- Add 2 to 4 grams of the diluted solution to one of the sodas per liter
- Add the same amount of water to the other soda (control)
- Carefully open and close the soda bottles without shaking them
- Shake both sodas gently multiple times to mix the stabilizer well
- Store both sodas in the refrigerator overnight



Second Method

- Produce two soda syrups, one containing 0.1 grams per kilogram of stabilizer and the other without it
- Inject 8 grams per liter of carbon dioxide gas into both syrups
- Pour both samples into identical containers
- Store both samples in the refrigerator for 24 hours



Performance Measurement Methods:



1 Sensory Test

- Ten trained evaluators and 50 ordinary consumers tested sodas containing gas stabilizer and those without it.
- The blind test provided samples labeled A and B.
- Evaluators had to answer one of the following questions:
 - **Is the gas sensation in sample A (control) higher than sample B (with stabilizer)?**
 - **Is the gas sensation in sample A (control) lower than sample B (with stabilizer)?**
 - **Are the gas sensations in samples A and B similar?**





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Gas Measurement

Samples were poured into similar glass beakers, and the amount of carbon dioxide dissolved in them was measured using:

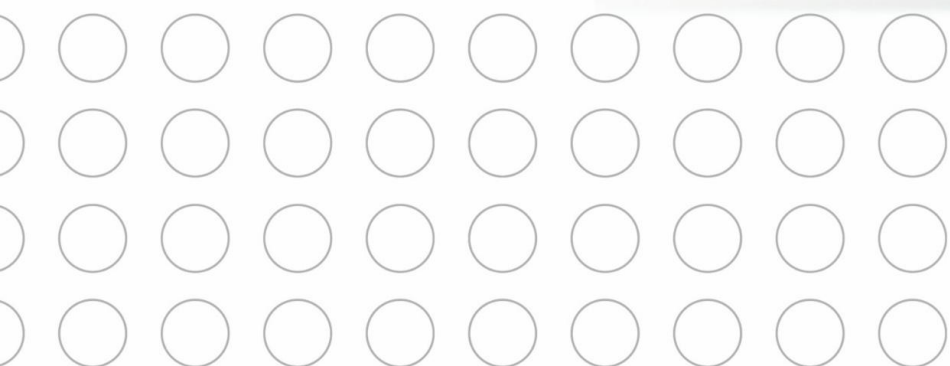
- Anton Paar CO₂ and O₂ measuring module.
- A scale to measure the weight of carbon dioxide released from the beverage.





3 Measurement of Foam Level

Sodas were poured directly from the bottle into graduated cylinders, and the foam level was measured based on the marks on the cylinders.



Results

In this section, you will observe the results obtained by one of our customers after adding WINNOVENT to the cola soft drink produced in their company, which has been achieved using the mentioned methods.

Sensory Test

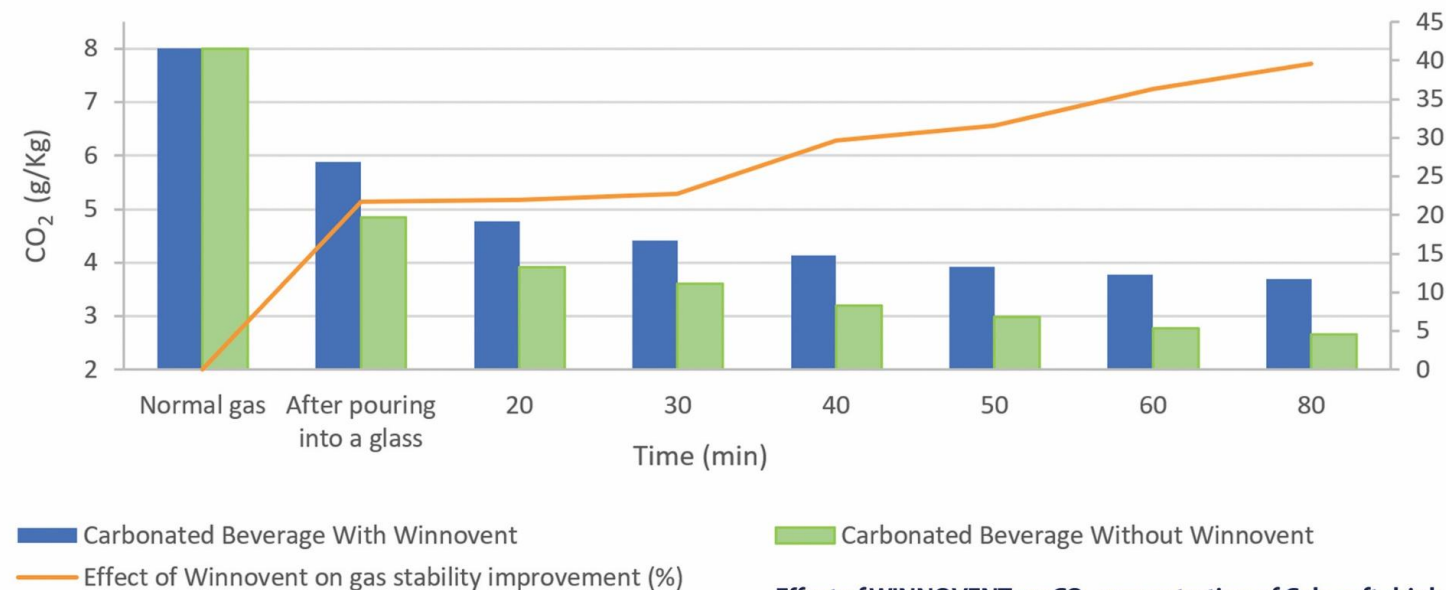
According to the results, all trained evaluators and 48 out of 50 ordinary consumers perceived samples containing stabilizer as more effervescent than regular samples. Only two ordinary consumers perceived the gas in both samples equally.

Gas Measurement

The chart below illustrates the effect of WINNOVENT on gas stability improvement in a cola soft drink.

The measurements were taken after pouring the beverage into a glass and during its storage within the glass (at a temperature of 20 degrees Celsius). According to these results:

- In the presence of WINNOVENT approximately %20 increase in carbon dioxide retention when pouring into the glass.
- The positive effect of the gas stabilizer became more apparent over time, with the sample containing the stabilizer having about %40 more gas than the control sample after 80 minutes.



Effect of WINNOVENT on CO₂ concentration of Cola soft drink



Foam Measurement

Based on the results, the foam created when pouring samples containing the gas stabilizer into the graduated cylinder was approximately one-fourth of the foam created when pouring the control samples.

It should be noted that the effectiveness of the gas stabilizer may vary slightly depending on the beverage composition and testing conditions.

Conclusion

The use of the gas stabilizer plays a significant role in consumer satisfaction, increasing product shelf life, and reducing waste.

Join the WINNOVENT Revolution

Experience the transformative potential of WINNOVENT & unlock new opportunities for your brand.

Whether through improved sustainability, enhanced consumer satisfaction, or streamlined production processes, WINNOVENT offers a comprehensive solution to the challenges facing the CSD industry.

Embrace the future of carbonated soft drinks with WINNOVENT today.

