# imbevia

IMBEVIA, our revolutionary liquid additive, is driving a fundamental change in the carbonated soft drink (CSD) industry. It offers numerous benefits that meet both consumer demand and sustainability goals.

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## **Redefining Carbonation and Sustainability**

In today's complex sustainability landscape, CSD manufacturers face many challenges, ranging from environmental concerns to evolving consumer expectations.

This creates a strong demand for innovative solutions that boost production efficiency while prioritizing both sustainability and consumer satisfaction.

IMBEVIA improves beverage stability and quality by easily blending into concentrated syrups, helping manufacturers reduce product waste, streamline production, and minimize environmental impact.

IMBEVIA's strength lies in its unique ability to encapsulate  $\mathrm{CO}_2$  bubbles, enhance carbonation and extend the shelf life of CSDs, thereby reducing waste. Through its advanced encapsulation process, IMBEVIA ensures strong carbonation, even under challenging conditions such as bottling and consumer handling.

Furthermore, IMBEVIA enables manufacturers to optimize PET packaging, addressing concerns related to plastic usage and environmental sustainability. By supporting lightweight PET bottles without compromising product integrity, IMBEVIA paves the way for eco-friendly packaging solutions.



## **Key Benefits of IMBEVIA:**

#### **Enhanced Carbonation:**

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

#### **Sustainable Packaging:**

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

#### **Energy Efficiency:**

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

#### **Extended Shelf Life:**

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

## How to use & evaluate functionality

#### Evaluation Methods for Carbonated Drinks Infused with IMBEVIA

- Select two cola samples produced on the production line
- Store the two samples in the refrigerator until they reach a temperature below 10°C
- Dilute 5 grams of stabilizing solution with 195 grams of water
- Add 2 to 4 grams of the diluted solution per liter to one of the soda samples
- Add the same volume of water as the diluted solution to the other soda sample (control)
- Carefully open and close the soda bottles without shaking them
- Shake both samples gently multiple times to ensure the stabilizer is well mixed
- Store both samples 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 CO<sub>2</sub> 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

- Two trained evaluators and 50 consumers tested two variations of soda samples: one containing the gas stabilizer and one without it
- The blind test was conducted with samples labeled A and B.
- Participants were asked to answer one of the following:
  Is the gas sensation in sample A stronger than in sample B (with stabilizer)?
  Is the gas sensation in sample A (control) weaker than sample B (with stabilizer)?
  Are the gas sensations of samples A and B similar?

# **2** Gas Measurement

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

- Anton Paar CO, and O, measuring module.
- A scale to measure the mass of CO<sub>2</sub> released from the beverage.

# **3** Foam Level Assessment

Soda samples were poured directly from the bottle into graduated cylinders, and the foam level was recorded based on the cylinder markings.

## Results

This section presents the results obtained by one of our customers after adding IMBEVIA to the cola soft drink produced by their company, using the mentioned methods.

## **Sensory Test**

According to the results, all trained evaluators and 46 out of 50 consumers described the samples containing stabilizer as more effervescent than regular samples. Only two consumers perceived the gas in both samples to be equal.

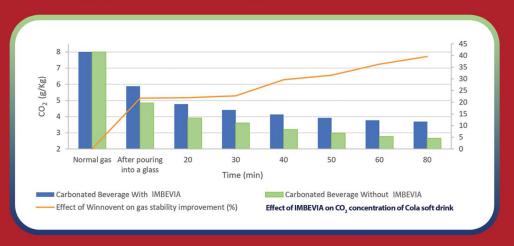
## **Gas Measurement**

The chart below illustrates the effect of IMBEVIA on gas stability in a cola soft drink. Measurements were taken after the beverage was poured into a glass and while it sat in the glass (at 20°C). According to these results:

- IMBEVIA resulted in approximately a %20 increase in carbon dioxide retention when poured into the glass.
- The positive effect of the gas stabilizer became more apparent over time, with the sample containing the stabilizer retaining about %40 more gas than the control sample after 80 minutes.

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



# Conclusion

Gas stabilizer plays a significant role in enhancing consumer satisfaction, extending product shelf life, and reducing waste.

## Join the IMBEVIA Revolution

Experience the transformative potential of IMBEVIA & explore new opportunities. Despite the challenges facing the CSD industry, IMBEVIA offers a comprehensive solution by improving sustainability, enhancing consumer satisfaction, and streamlining production processes. Embrace the future of carbonated soft drinks with IMBEVIA today.



Info@noblealliancetrade.com www.noblealliancetrade.com

+971 547875804 +971 503287864

No. 206 Ohmydesk Office 32d St, Al Satwa, Dubai