

FOAMSCOPE™

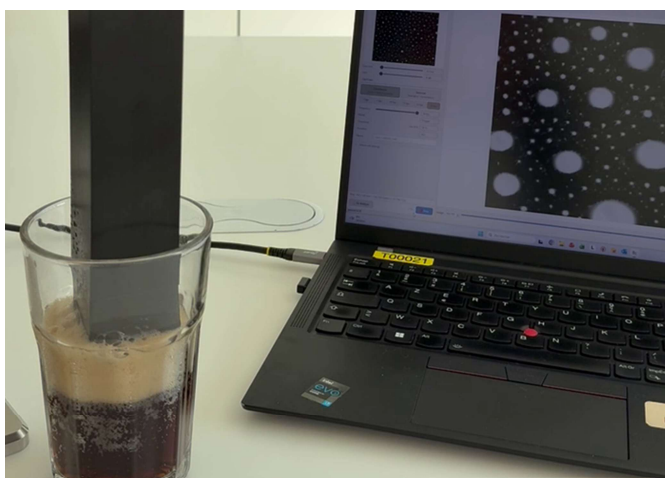
Coca-Cola Zero® Foam analysis

Objective

Characterize the rapid evolution of the foam structure immediately after pouring a carbonated beverage.

Measurement

FOAMSCOPE™ is immersed directly into the glass before pouring, allowing the foam structure to be monitored in situ from the first seconds after foam formation.

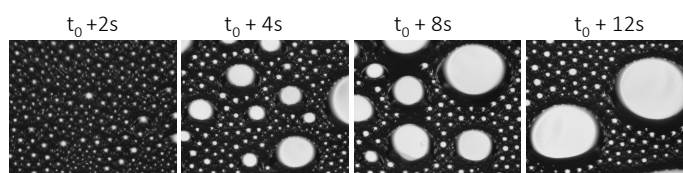


Sample	Bottle of Coca-Cola Zero®
Camera settings	Exposure: 4.30ms - Gain: 0dB
Capture settings	Frequency: 3fps - Time: 12sec

Key analysis parameters

FOAMSCOPE metric	Information provided
Bubble count	Bubble population and kinetics of bubble disappearance
D32 Sauter Diameter	Characteristic bubble size and foam coarsening
PDI	Evolution of bubble size heterogeneity
Liquid fraction	Evolution of the liquid content during foam decay

Foam structure images capture



t₀ + 2 s — Initial foam

High population of predominantly small bubbles.

t₀ + 4 s — Rapid restructuring

Small bubbles disappear while larger bubbles emerge.

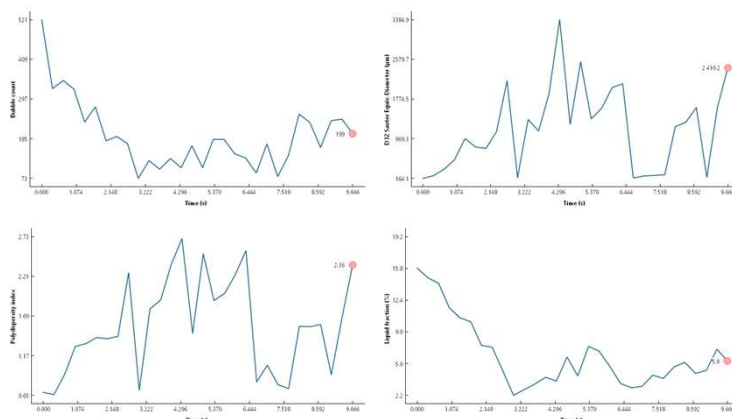
t₀ + 8 s — Coarsening

Strong increase in characteristic bubble size and increasing size heterogeneity.

t₀ + 12 s — Foam decay

Few large bubbles dominate the remaining foam structure.

Foam structure analysis



Bubble Count ↓

Rapid decrease in bubble population

D32 ↑

Overall increase reflecting the rapid growth of the characteristic bubble size.

PDI ↑ / highly variable

Increasing and fluctuating PDI reflects the rapidly changing bubble size distribution during foam decay.

Liquid Fraction ↓

Rapid initial decrease followed by a lower plateau, indicating a major evolution of the liquid content during foam decay.

FOAMSCOPE™ enables the rapid foam decay of carbonated beverages to be quantified directly after pouring, providing relevant metrics to compare formulations and foaming behavior.

Note: this sheet is designed as an application illustration, not as a scientific validation study.