



SIZE AND CHARGE ANALYSIS FOR THE PREDICTION OF GUSHING

CONTEXT

Gushing is the over-foaming of carbonated beverages when the bottle is opened, as shown in **Figure 1**. Gushing is an important quality feature of the beverage industry. This phenomenon can occur with all carbonated beverages, such as beer, spritzers, or water. Gushing is divided into primary and secondary gushing. Primary gushing is due to the raw materials of the beer. Secondary gushing can be traced back to nanoparticles of iron, calcium oxalate, or surfactants that are produced during production. Two protein groups are thought to be responsible for primary gushing. These are fungus-specific hydrophobics and non-specific lipid transfer proteins (ns-LTP) that are typical of the plant.



Figure 1: Gushing when opened

The goal of the research is now to find and characterise substances that promote or prevent gushing in order to be able to predict gushing. As gushing is caused by nanoparticles, as described above, colloid-chemical measurement methods such as dynamic light scattering and the flow potential in conjunction with charge titration are excellently suited for the analysis.^[1-11]