

APPLICATION NOTE

Pressure Formation – Burst Risk



Originating from gas producing microorganisms

Pressure formation in a container is usually caused by proliferation of gas producing yeasts, rarely by bacteria. Depending on the nutrient availability, some microorganisms degrade carbohydrates under anaerobic conditions thus producing carbon dioxide. The gas production may proceed until containers swell and even can burst. In case of a yeast contamination, the burst risk especially for glass containers is very high. Prevent damage and avoid recall campaigns which are everything else but good advertising.

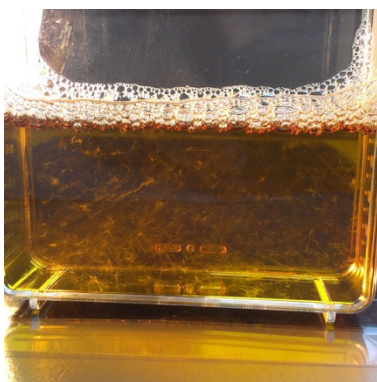


The Problem

Gas production accompanied by burst risk starts early when you have a contamination with a fast-growing yeast species as *Saccharomyces*, *Zygosaccharomyces*, or *Candida*. In the best case it is detected before the products leave the warehouse.

But it becomes problematic when the products are shipped directly after filling or if there are slow growing microorganisms. There may be a good chance that a product may be called back from a wholesaler, but as soon as it reaches the retail sellers or even the end-consumer, a public call-back action becomes inevitable.

The biggest challenges are the slow growing bacteria or yeasts because these may show a long latency period from which they suddenly may grow out in mostly all containers of a lot and lead to gas production including risk of burst area wide.



The Solution

Routine control includes the continuous monitoring of the typical product spoilers. If always the same products are produced in a line, usually a combination of those analyses which have the best information potential while they are well adaptable into the laboratory workflow has established.

But routine can make blind – often a view from outside may help to introduce small and large improvements in the process. Especially when producing beer mixes, shanties, or fruit containing mixes, it is essential to review the routine microbiology methods of a lab: the possible spectrum of spoilers is basically changing as soon as sugar comes into the product. Besides, new raw materials as tropical fruit may bear new and even heat resistant spoilers for which the standard conservation processes may not be sufficient. A contamination by *Alicyclobacillus* is not at all always induced by *A. acidoterrestris* – anyways the standard analysis methods are often only focusing on this species.

APPLICATION NOTE

Pressure Formation – Burst Risk



We can be your second eye – we record the actual status of your microbiology lab and work out together with you the best routine method for you and your lab. What you can't do yourself, our service lab is happy to assist with: The identification of unknown bacteria or yeast which caused pressure in your containers. Or the routine analysis for *Alicyclobacillus* according to IFU method no. 12, combined with PCR analysis – the result is available 3 days earlier and it is including a test for all *Alicyclobacillus* species.

You receive the best possible information from us also when back-tracing spoilers through your production process: sharing an identical name does not necessarily mean identical microorganisms and identical contamination sources! By DNA sequencing we can directly compare different isolates of microorganisms and so tell you if those are really identical, or if they are varieties of one species. Only with these results you can reliably localize the potential sources of a contamination.

